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## Emotion-Related Factors as Mediators in the Relation Between Family Stress and Adolescent Externalizing Problems

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EMOTION-RELATED FACTORS AS MEDIATORS IN THE RELATION BETWEEN  
FAMILY STRESS AND ADOLESCENT EXTERNALIZING PROBLEMS

by

Kristy Marie DiSabatino

A Dissertation  
Submitted to the Graduate School  
and the Department of Psychology  
at The University of Southern Mississippi  
in Partial Fulfillment of the Requirements  
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## ABSTRACT

### EMOTION-RELATED FACTORS AS MEDIATORS IN THE RELATION BETWEEN FAMILY STRESS AND ADOLESCENT EXTERNALIZING PROBLEMS

by Kristy Marie DiSabatino

August 2016

Adaptive regulation of emotions, maternal depression, parenting stress, and environmental stress have all been related to adolescent psychosocial outcomes. Considering these established relations, the current study examined serial mediation models in which it was hypothesized that (1) maternal distress or community stress (examined in separate models) would positively relate to adolescent externalizing behaviors directly and (a) indirectly through maladaptive maternal emotion socialization (ES) practices (i.e., magnify, neglect, and punish), (b) indirectly through adolescent emotion regulation (ER) difficulties, and (c) indirectly through both maternal ES practices and adolescent ER difficulties; (2) maternal distress or community stress would positively relate to adolescent ER difficulties (directly and indirectly through maladaptive maternal ES practices); and (3) accounting for initial maternal distress (or community stress) maladaptive maternal ES practices would positively relate to adolescent externalizing behaviors (directly and indirectly through adolescent ER difficulties). Additionally, the presence of a second caregiver was hypothesized to moderate the above models, specifically attenuating the path between ES and ER. To examine the role of the paternal caregiver in two-parent families, paternal ES practices were examined as a moderator in the relation between maternal ES and adolescent ER difficulties. Results indicated that maternal distress is an important predictor of emotional processes as well

as externalizing behaviors among adolescents. Specifically, a maternal caregiver who experiences more distress is more likely to engage in maladaptive socialization practices which then relate to more ER difficulties, which subsequently relate to more externalizing problems for adolescents. However, this finding only holds true for the magnification and punishment of emotions. The relation between magnifying ES practices and ER difficulties was attenuated by the presence of a paternal caregiver; however, paternal ES practices were not supported as a moderator of the model. Overall, community stress was not an important predictor for emotional processes within a family or adolescent outcomes. However, in the context of punishing ES practices, lower paternal punishing practices attenuated the relations between community stress and both ER and externalizing problems among adolescents. These results underscore the importance of understanding the complex emotional transactions within a family and need for further research.

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## LIST OF ABBREVIATIONS

CFI	Comparative Fit Index
CI	Confidence Intervals
CS	Community Stress
CYDS	Chicago Youth Development Study
DASS	Depression, Anxiety, and Stress Scale
DERS	Difficulties in Emotion Regulation Scale
df	Degrees of Freedom
EAC	Emotions as a Child
ES	Emotion Socialization
ER	Emotion Regulation
MD	Maternal Distress
MEP	Meta-Emotion Philosophy
<i>n</i>	Sample Number
PRPA	Parent Report of Reactive and Proactive Aggression
PSS	Parenting Stress Scale
RMSEA	Root Mean Square Error of Approximation
SD	Standard Deviation

## CHAPTER I - INTRODUCTION

Variations within the broad context of a family can have many implications regarding a youth's future positive and negative psychosocial outcomes. Numerous specific components of a family (e.g., parental psychopathology, single-parent homes) have been examined in relation to child and adolescent outcomes (Dunifon & Kowaleski-Jones, 2002; Kendig & Bianchi, 2008; Lovejoy, Graczyk, O'Hare, & Neuman, 2000). Recent literature has highlighted how variations in the way a parent socializes a child or adolescent to emotion are key factors in behavioral outcomes. For example, demographic variables, including the parent's gender (e.g., Klimes-Dougan et al., 2007a), may impact emotion socialization practices that are then differentially associated with youth problems.

Given the potential differences in emotion socialization practices and the likelihood that a better understanding of those differences could inform prevention and intervention, the current study focuses on understanding what factors relate to more negative emotion socialization practices. Furthermore, the current study examines how those emotion socialization practices may impact other factors that lead to negative adolescent outcomes with a focus on externalizing behaviors.

With the literature indicating that parents are important socializers of emotions for youth (e.g., Miller-Slough & Dunsmore, 2016), understanding how specific parent factors may influence parents' ability to successfully socialize emotions as well as how they may influence engagement in effective parenting practices are particularly meaningful. Environmental stressors experienced due to neighborhood factors (e.g., unsafe neighborhoods) also have been linked to negative outcomes for youth (Linares et al.,

2001). Family stress has been shown to be related to how parents interact with their children in that the parents that experience more stress tend to use techniques that are not only less supportive, but also nonsupportive, when teaching children about emotions and responding to emotional experiences (Nelson, O'Brien, Blankson Calkins, & Keane, 2009). Moreover, research indicates that mothers who display depressive symptoms engage in more maladaptive parenting styles (Lovejoy et al., 2000) and less adaptive emotion socialization practices (Feng, Shaw, Skuban, & Lane, 2007). Additionally, maternal psychopathology, particularly depression, has been related to negative global psychosocial outcomes, as well as externalizing behaviors, in children and adolescents (Beardslee, Bemporad, Keller, & Klerman, 1983; Foster, Garber, & Durlak, 2008; Turney, 2012).

The current study examined how the aforementioned family and environmental factors relate to adolescent externalizing behaviors through serial mediation models in which it was hypothesized that maternal distress (i.e., maternal depression, maternal parenting stress) or neighborhood/environmental stress (i.e., community stress) relate to adolescent externalizing behaviors. Maladaptive maternal emotion socialization practices and adolescent emotion regulation difficulties were examined as the serial mediators in this relation. Specifically, the study examined if maternal distress or community stress, examined as predictors in separate models, related to differences in maternal emotion socialization practices, which in turn relate to adolescent emotion regulation difficulties and thus differences in adolescent externalizing behaviors.

### Emotion Socialization (Meta-emotion Philosophy)

Meta-emotion philosophy (MEP) is an individual's "organized set of reactions, thoughts, and feelings toward emotions" (Gottman, Katz, & Hooven, 1996; Hunter et al., 2011 p. 428) and was first termed by Gottman et al. (1996). MEP is composed of many elements including one's awareness of emotions, including his/her own emotions and others' emotions (e.g., their child's experiencing of emotions) as well as one's coaching of emotions (e.g., labeling emotions). One might consider emotion socialization as a subset under meta-emotion philosophy. However, meta-emotion philosophy considers components such as attitudes about emotions, whereas emotion socialization focuses on the process of emotion socialization and how the learning and socialization of emotions take place in a family (e.g., reactions to affect, parents seeking out negative experiences as an opportunity to coach children or adolescents through negative affect; Gottman et al., 1996). Because the two constructs are similar, and socialization is often considered as part of the MEP process, both constructs were reviewed to better understand the potential impact they may have on adolescent outcomes.

Parents engage in various behaviors that may be more or less beneficial for adaptive emotion socialization outcomes for youth. For example, a parent could engage in rewarding responses (e.g., asks why his/her child is sad) or more maladaptive responses such as magnifying the child's emotions (e.g., gets upset, too, when his/her child is sad), neglecting the child's emotions (e.g., ignores or does not notice; is not around), or punishing the child for experiencing emotions (e.g., calls his/her child a crybaby when his/her child is sad).



The various ways in which a caregiver socializes a child to emotions may relate differently to youth outcomes. Specifically, a parent lacking an ability to regulate his/her own emotional responses when confronted with an adolescent's distress (i.e., magnifying emotions) may be associated with different outcomes than if a parent ignores the youth's emotional reactions (i.e., neglecting emotions). Thus, it is possible that a caregiver modeling emotion dysregulation by magnifying emotions has a different impact than invalidating (punishing) or ignoring (neglecting) an emotional experience. In fact, O'Neal and Magai (2005) found that a caregiver's magnification, neglecting, or punitive responses to youth emotional experiences were each correlated with externalizing behaviors, whereas a caregiver's rewarding (defined above) or overriding (i.e., dismissing a child's emotions or distracting them from the emotion) of the youth's emotional experiences were not related. As such, understanding the role of specific emotion socialization practices, rather than overall emotion socialization, is imperative. Moreover, the importance regarding the way an individual's MEP is expressed can vary depending on the developmental age of a child or adolescent (Katz & Hunter, 2007). Whereas there is a wealth of information regarding MEP as it is related to children and child outcomes, less research has focused specifically on the socialization of emotions in adolescents. Thus, the current study will focus on specific parental emotion socialization practices with adolescents.

In a broader definition and highly related to emotion socialization theory, Morris, Silk, Steinberg, Myers, and Robinson (2007) outline a tripartite model that suggests how emotion socialization, in general, and learning of emotion regulation, specifically, takes place. The root of this model lies within parental characteristics. Essentially, it is

conceptualized that different parent characteristics (e.g., mental health, emotion regulation skills) influence what a child observes from his/her parents, in which parenting practices a parent engages, and ultimately, the overall family climate.

Emotion coaching (e.g., labeling emotions) is one of the major foci in the literature on emotional processes that affect youth outcomes. Some research has indicated that emotion coaching may not provide direct benefits for youth outcomes; however, it may buffer the effects of more negative emotional experiences for the youth (e.g., emotion dismissing behaviors from a parent such as neglecting emotion socialization practices; Lunkenheimer, Shields, & Cortina, 2007a). Moreover, Ramsden and Hubbard (2002) also found that maternal emotion socialization practices were indirectly related to child externalizing behaviors (i.e., aggression). Specifically, Ramsden and Hubbard (2002) found that positive maternal emotion socialization practices (i.e., acceptance of child's negative emotions) were indirectly related to child aggression through the construct of child emotion regulation skills. In other words, the relation between maternal emotion socialization practices and child aggressive behavior was explained by the child's emotion regulation skills. Other research, conversely, has indicated that there are direct benefits for youth in regard to effective emotional coaching by a parent. For example, emotion socialization (e.g., emotion talk) has been related to fewer problem behaviors in children (Eisenberg et al., 2001b); furthermore, emotion coaching has been related to fewer internalizing symptoms in adolescents (Stocker, Richmond, Rhoades, & Kiang, 2007). Therefore, it is thought that if parents utilize emotion coaching, the outcomes for their adolescent will be more favorable. However, more research on emotion coaching in adolescents is needed—particularly as it relates to externalizing

behaviors. Additionally, it may be that a parent's ability to successfully coach or socialize his/her adolescent to emotion can be compromised by specific parental factors (e.g., parent distress; Nelson et al., 2009), which deserves further investigation.

Some research has indicated that, although emotion dismissing behaviors (such as neglecting emotion socialization practices) within a family is a risk factor for youth, emotion coaching interacts with emotion dismissing behaviors and acts as a protective factor against maladaptive outcomes for youth (e.g., emotional lability/negativity and internalizing behavior) in the context of negative emotions (Lunkenheimer, Shields, & Cortina, 2007b). Further, maternal emotion coaching was found to predict adolescents' regulation of anger, which in turn, was inversely related to the externalizing behaviors of the adolescent (Shortt, Stoolmiller, Smith-Shine, Mark Eddy, & Sheeber, 2010). In general, this research provides evidence that the emotional transactions/processes within a family are important components to consider in youths' emotional development as they relates to behavioral outcomes. More specifically, the literature provides reliable evidence that there may be an indirect link between emotion socialization and youth behavioral outcomes, possibly through youth emotion regulation, rather than simply a direct link.

#### *Emotion Socialization as it Relates to Outcomes*

Understanding the emotional climate of a family is of particular interest and importance because of the nature of the developmental time period of adolescence (Klimes-Dougan & Zeman, 2007b). For example, adolescence involves experiencing new abilities, changing physically, emotionally, and cognitively, and facing new challenges (e.g., new social and peer pressures, increased intensity of emotions; Calkins & Bell,

1999; Larson et al., 2002). The meta-emotion philosophy of a parent can be particularly important for youths' outcomes. One of the findings in Katz and Hunter's (2007) study, was that mothers who were more accepting of their own negative emotions are more likely to have adolescents with lower levels of depression, higher self-esteem, and fewer internal, external, and total problems. Additionally, they found that emotion coaching was related to more adaptive parent-adolescent interactions (Katz & Hunter, 2007). These findings highlight the importance of a parent's own attitudes towards emotions and emotion socialization practices within the family system. Furthermore, it appears that different aspects of MEP are more influential than others. Whereas a mother's acceptance of her own negative emotions seems to be important for adolescent outcomes, the mother's acceptance of the adolescent's emotions is less important for adolescent outcomes. Moreover, the more aware a mother is of the adolescent's negative emotions, the fewer self-esteem problems the adolescent has (Katz & Hunter, 2007). However, some of these differences could be explained by the changing nature of adolescents sharing emotional experiences with their parents (Katz & Hunter, 2007).

According to Hunter and colleagues (2011), family structure was unrelated to MEP. However, their study is one of the few studies, if not the only study, that has considered family structure in the context of MEP. Given the plausible rationale that the presence of an additional family member to socialize a child to emotions may be a considerable protective factor, and the lack of available current research, understanding family structure in the context of these familial emotional transactions is a major area of focus in the current study.

Yap, Allen, and Ladoucer (2008) found that the invalidating response of a mother toward an adolescent's positive affect (such as punishing emotion socialization practices) resulted in more dysregulated behaviors and maladaptive strategies by the adolescent. Maternal invalidation/punishing was also related to more depressive symptomatology in adolescents. Moreover, it was found that not only was there a relation between maternal invalidation and adolescent depressive symptoms but also that emotion regulation strategies of the adolescent mediated this relation. Given that it is clear that emotion socialization practices are critical to healthy child and adolescent outcomes, research should consider not only what factors (e.g., family stressors) relate to parents' emotion socialization practices, but also what factors (e.g., adolescent emotion regulation) may further explain the relation of those emotion socialization practices to those child and adolescent outcomes. The current study aimed to address these questions, specifically within an adolescent sample.

### Emotion Regulation

Emotion regulation—generally considered to be the ability to increase positive emotions, decrease negative emotions, and display expressions of emotions appropriately, with the purpose of achieving some goal (Eisenberg & Spinrad, 2004; Gratz & Roemer, 2004; Thompson, 1994)—has been linked to child and adolescent externalizing behaviors (Batum & Yagmurlu, 2007; Hill, Degnan, Calkins, & Keane, 2006; McCoy & Raver, 2011). Despite increased attention to emotion regulation within the recent years (e.g., Zeman et al., 2006), there still remain a variety of opinions on how the construct should be operationalized—and it varies widely across different studies. For the purposes of the current study, emotion regulation was operationalized as adolescents' "(a) awareness and

understanding of emotions; (b) acceptance of emotions; (c) the ability to engage in goal-directed behavior, and refrain from impulsive behavior, when experiencing negative emotions; and (d) access to emotion regulation strategies perceived as effective” (Gratz & Roemer, 2004, p. 43).

### *Emotion Regulation in the Context of Emotion Socialization*

Emotion socialization may not necessarily be directly related to behavioral outcomes of youth; rather, it may affect another process such as emotion regulation that in turn affects behavioral outcomes. Research has begun to suggest that emotion socialization is indirectly related to youth externalizing problems through emotion regulation processes (Buckholdt, Parra, & Jobe-Shields, 2014; Ramsden & Hubbard 2002). Specific to a maltreated population in which children displayed more emotion dysregulation, mothers were found to engage in more maladaptive emotion socialization practices (e.g., more invalidating, less emotion coaching; Shipman et al., 2007).

Important for the current study is that emotion socialization practices actually mediated the relation between maltreatment status for children and their emotion regulation skills (Shipman et al., 2007). This finding provides further support linking maternal emotion socialization to child emotion regulation. Moreover, despite other major stressors, problematic maternal emotion socialization explained child emotion dysregulation. Likewise, as discussed earlier, Yap and colleagues (2008) found that adolescent emotion regulation difficulties mediated the relation between maternal emotion socialization (i.e., invalidating adolescents’ positive affect) and adolescent depressive symptoms.

Other parent socialization factors (e.g., inconsistent socialization, punitive responses) have been related to youth emotion regulation outcomes (Mirabile, 2014,

Shewark & Blandon, 2015). Additionally, parent socialization has been found to have specific contextual influence on youth's performance in emotion-specific tasks (i.e., inhibition task using simple affect faces—happy and sad) versus non-emotional tasks (i.e., inhibition task using a sun and moon) indicating that maternal emotion language (theorized to be an emotion socialization component) was particularly important in fostering inhibition while processing content that is emotional in nature (Kahle, Grady, Miller, Lopez, & Hastings, 2016).

Not only does cross-sectional research indicate that emotion socialization may be indirectly related to youth outcomes through emotion regulation, but also longitudinal research has supported such a conclusion as well (Cunningham, Kliewer, & Garner, 2009). Specifically, Cunningham and colleagues (2009) found that in an African American sample, Time 2 outcomes (i.e., grades, internalizing behaviors, externalizing behaviors, and social skills) were affected by the caregivers' MEP through the child's emotion regulation skills or emotion understanding. When examining their findings more closely, the authors indicated that there were some gender differences. Emotion regulation, broadly conceptualized, mediated the relation between caregivers' MEP and all four of the outcomes specifically for boys. However, emotion understanding (a subcomponent of emotion regulation) was a mediator in the relation between MEP and internalizing behaviors for boys and MEP and social skills for girls.

#### *Adolescent Emotion Regulation as it Relates to Adolescent Outcomes*

With increased attention to emotion regulation, much of the literature has linked a variety of externalizing behavioral outcomes (e.g., higher aggression, oppositional behaviors, attention, hyperactivity, impulsivity problems) for youth to poor emotion

regulation difficulties (Batum & Yagmurlu, 2007; Hill et al., 2006; for a review, see Zeman et al., 2006). Specifically, research has consistently indicated a link between poor emotion regulation skills and behavioral problems for youth (Eisenberg et al., 2001b; Hill et al., 2006). Eisenberg, Cumberland, and colleagues (2001) found that even at as young as four years of age, children with higher levels of externalizing problems (i.e., measured by the Child Behavior Checklist) compared to children with internalizing problems, had lower behavioral regulation skills. Hill and colleagues (2006) found that, for girls, emotion regulation along with inattention was predictive of whether an individual would fall into a more problematic behavioral profile (e.g., chronic-clinical profile) regarding externalizing problems. In contrast, for boys, emotion regulation was not predictive of a chronic-clinical profile; however, SES and inattention were predictive of such a profile.

As described in more detail below, child and adolescent emotion regulation is also associated with parent depression, parenting stress, and neighborhood characteristics (e.g., Bandon, Calkins, Keane, & O'Brien, 2008; Valiente, Lemery-Chalfant, & Reiser, 2007). Furthermore, Raver (2004) concluded from his review of the literature that it is essential for more research to be conducted on child and adolescent emotion regulation within its broad context—particularly risk environments (e.g., cultural and economic contexts). Thus, the current study considered adolescent emotion regulation as a mediator in the relation between family stressors and adolescent externalizing behaviors and also as a mediator between maternal emotion socialization practices and adolescent externalizing behaviors.



## Family Stressors

### *Maternal Depression*

Pertinent to the current study, which examined maternal caregivers, it is likely that maternal depression and stress, as well as stress from neighborhood and other environmental factors, not only relate directly to youth outcomes but also relate indirectly through different abilities among maternal caregivers to adaptively socialize youth to emotion. That is, maternal emotion socialization practices may mediate the relation between family stressors and youth outcomes.

It has been well established that maternal depression is related to various negative outcomes for youth (Downey & Coyne, 1990; Goodman et al., 2011). Among those negative outcomes are child externalizing behaviors (e.g., external behavioral problems, aggression; Herwig, Wirtz, & Bengel, 2004; Pugh & Farrell, 2011). Moreover, the literature has begun to examine the factors contributing to the relation between maternal depression and externalizing behavioral problems for youth. For example, Herwig et al. (2004) conducted research that explained that, although maternal depression was related to behavioral problems, it was also that the mothers' partnership satisfaction (e.g., marital quality) mattered. Specifically, both maternal depression and partnership satisfaction predicted externalizing behavioral problems. Such findings indicate that although maternal depression is an important factor to examine when trying to understand youth externalizing behavioral problems, there are other family components that need to be examined in addition to maternal depression.

Maternal depression also has implications for youths' emotion regulation abilities. For example, Hoffman, Crnic, and Baker (2006) noted that in addition to more behavioral

problems, youth with a depressed mother also had more difficulties regulating emotions. Dagne and Snyder (2011) found interesting results in that children with a depressed mother were able to down-regulate their unprovoked anger in the context of ongoing interactions with their mothers.

Additionally, maternal depression may have implications for the amount of parenting stress mothers report experiencing and, in turn, the parenting practices in which they engage. Although parenting practices are typically termed in the literature as specific parenting behaviors (e.g., monitoring, harshness, positive parenting), it is logical to consider emotion socialization as a form of parenting practices in that it is a skill in which parents can choose to engage to benefit their child. Breaux, Harvey, and Lugo-Candelas (2016) found that maternal risk factors such as overall psychopathology, although not depression specifically, are predictive of emotion socialization practices (i.e., reactions to adolescent negative emotion).

#### *Maternal Parenting Stress*

Stress related to parenting a child has various implications for a family. Researchers have found that, when a mother is experiencing higher levels of stress, her child is likely to experience more emotional and social difficulties (Khoury-Kassabri, Attar-Schwartz, & Zur, 2014). Khoury-Kassabri and colleagues (2014) found that maternal stress was also related to youth outcomes, indirectly, through increased corporal punishment from the mother. Thus, it appears that not only is maternal parenting stress related to child externalizing behaviors but also that this relation may, in part, be explained by the types of practices in which the mother engages.

It has also been noted that family-related risk factors (e.g., parent psychopathology, being a single-parent, low educational attainment) have been related to more nonsupportive parenting responses, although they are unrelated to supportive parenting responses in some research (Shaffer, Suveg, Thomassin, & Bradbury, 2011). Specifically, unsupportive parenting responses mediate the relation between family-related risk factors and adolescent emotion regulation (Shaffer et al., 2011).

Buodo and colleagues (2013) examined emotional reactivity in children by measuring electrodermal reactivity (i.e., low or high skin conductance responses) after children viewed stimuli (i.e., digital pictures from an affective assessment protocol). They explained that, based on previous research, it was likely that individuals with lower reactivity levels would be more biologically prone to having more externalizing problems. Moreover, they hypothesized that parenting stress would exacerbate the relation between emotional reactivity levels and externalizing behaviors. Their analyses supported the hypotheses that (a) individuals with lower reactivity (i.e., low SRCs) would display more externalizing behaviors and that (b) this relation was strongest when there was a higher level of parenting stress present (Buodo et al., 2013). There was not an interaction for the group of individuals who had higher reactivity levels (i.e., high SRCs). Although these findings indicated that parenting stress moderated the relation between a biological predisposition to externalizing behaviors (i.e., by exacerbating such outcomes in the presence of lower reactivity), it also provides further evidence of the important link between parenting stress and child externalizing behaviors and underscores the need for further studies to investigate which variables may explain this link.

### *Environmental Stress*

The way in which families in lower-income neighborhoods engage in emotional socialization practices remains unclear (Chaplin, Casey, Sinha, & Mayes, 2010). Nonetheless, it is likely that the stressors experienced in these neighborhoods may make it more difficult and present unique barriers to engaging in “adaptive” socialization practices (Chaplin et al., 2010). Westbrook and Harden (2010) conducted a study in which they examined family stress (e.g., community violence) components and how they related to child outcomes. They found that family risk factors do in fact influence the developmental trajectory of children, specifically through parenting styles and practices. This finding means that family stress factors affect parenting practices (e.g., warmth), which in turn affect child outcomes. Thus, these findings provide evidence for the current model predicting environmental and family stressors affect parenting behaviors related to emotion socialization, which in turn affect adolescent outcomes.

Further, Kliewer et al. (2004) conducted a short-term longitudinal study with a sample of children living in a high-violence area. They found that a child’s emotion regulation skills and the acceptance they received from their caregiver (i.e., Acceptance/Rejection subscale from the Child Report of Parent Behavior Inventory on which the child rates how much they feel their parent understood their problems and worries), among other factors (i.e., caregiver emotion regulation and interactions between the caregiver and child), were particularly important protective factors against child internalizing and externalizing problems. Although Kliewer et al.’s findings underscored the importance of caregiver acceptance in relation to externalizing and internalizing symptoms, their results also demonstrated that environmental stressors could moderate

those relations. For example, there was an interaction between caregiver acceptance and violence exposure when predicting internalizing symptoms. Specifically, internalizing symptoms were high in the presence of violence exposure, regardless of levels of caregiver acceptance. Given the current state of the literature underscoring the impact communities have on families and adolescent functioning, the current study examined community stress as a predictor variable.

### *Paternal Presence*

Research has highlighted that adolescents who grow up in a family where parents are married fair better in that they have families with fewer economic struggles, their paternal caregiver is more involved in their lives, and both the parenting and psychological distress the parents experience are lower than that of adolescents who are in a single-parent home or a home where a parent is cohabitating (Bachman, Coley, & Carrano, 2012). Additionally, adolescents in homes of married parents (i.e., married approximately one year or more) are likely to experience increased positive outcomes (e.g., psychological and emotional functioning) in comparison to single-parent or cohabitating homes (Bachman, Coley, & Chase-Lansdale, 2009). Although there are some studies with conflicting findings (e.g., Compas & Williams, 1990), a majority of research indicates that youth in single-parent homes experience some degree of increased negative outcomes such as poorer subjective health (e.g., Låftman, Bergström, Modin, & Östberg, 2014) and psychological well-being (e.g., self-esteem; Bachman et al., 2009; Langston & Berger, 2011). However, the ways in which family structure impacts specific emotional processes is understudied. Thus, examining possible differences in emotional processes of adolescents in single versus two-parent homes is warranted

The impact of the father on these emotion-related processes is often neglected in research; yet, better identification of factors specific to fathers (or paternal caregivers) and their contribution to the emotional socialization of youths is critical. Research has begun to recognize that although maternal socialization of youths' emotions is important—and is often the target of study—fathers play an important role and often differ in their socialization practices from mothers. For example, fathers tend to be less accepting and supportive than mothers of children's negative emotional expressions (Stocker et al., 2007). Short and colleagues (2016) found that fathers differed in how they socialized adolescent emotions (i.e., more punitive of boys' sadness and girls' anger compared to mothers), which also was related to more depressive symptoms for adolescents. Contrary to Short and colleagues' findings, in a study examining younger children (i.e., infancy to kindergarten), Mezulis, Hyde, and Clark (2004) found that, in the context of maternal depression, paternal involvement can have beneficial outcomes for youth; however, if the paternal figure is depressed as well, it exacerbates the effect maternal depression has on young children's externalizing behaviors. Such findings underscore the importance of examining maternal and paternal functioning—including emotion socialization—in predicting youth outcomes.

Fathers who are functioning well may be able to help adaptively socialize youth to emotions despite the presence of other various family stressors. However, this possibility has not been empirically examined to the same extent as maternal influences. Initial evidence appears to indicate that, when a parent is depressed, his/her partner increases his/her own supportive responses to their adolescent's negative emotions (Breux et al., 2016; Nelson et al., 2009). However, more work is needed in this area,

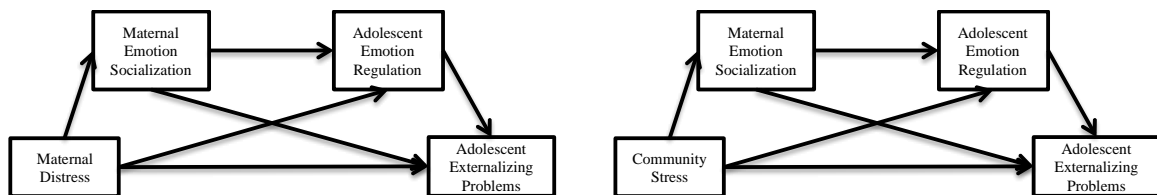
including determining the impact on adolescent behavioral outcomes. To continue to fill this gap in the literature, the current study considered the emotional socialization practices of the paternal caregiver, when present in the home, in addition to the maternal caregiver's emotion socialization practices. Specifically, the current study examined relatively higher positive emotion socialization practices of the paternal caregiver as a protective factor in the hypothesized relation between maternal emotion socialization practices and child emotion regulation.

### Current Study

Adaptive regulation of emotions, socialization to emotions, maternal depression, parenting stress, and environmental stress have all been related to youth outcomes. It seems likely that certain family stressors (i.e., maternal depression, maternal parenting stress, neighborhood/environmental stress) could make socializing youth to emotions more difficult. Subsequently, both maternal distress and community stress, as well as the potentially resultant maladaptive maternal emotion socialization practices, may predict more emotion regulation difficulties for youth which, in turn, may predict more externalizing behaviors. Paternal presence could further exacerbate this trajectory toward externalizing behaviors [if the father is absent—or to the extent that the father (when present) also displays maladaptive emotion socialization practices] or could attenuate the trajectory [if the father is present—or to the extent that the father (when present) displays adaptive emotion socialization practice].

The purpose of the current study was to examine serial mediation models (see Figure 1) in which it was hypothesized that (1) family stressors (i.e., maternal distress or community stress, examined as predictors in separate models) would positively relate to

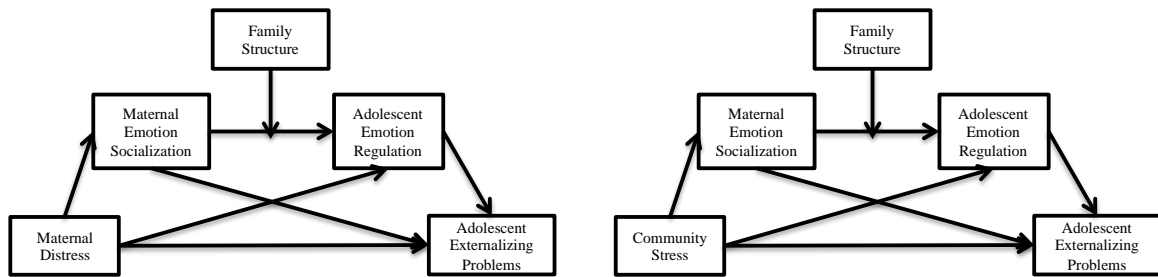
adolescent externalizing behaviors directly and (a) indirectly through maladaptive maternal emotion socialization practices (i.e., magnify, neglect, and punish), (b) indirectly through adolescent emotion regulation difficulties, and (c) indirectly through both maternal emotion socialization practices and adolescent emotion regulation difficulties; (2) maternal distress or community stress (examined separately) would positively relate to adolescent emotion regulation difficulties (directly and indirectly through maladaptive maternal emotion socialization practices); and (3) accounting for initial maternal distress or community stress, maladaptive maternal emotion socialization practices would positively relate to adolescent externalizing behaviors (directly and indirectly through adolescent emotion regulation difficulties). It was further hypothesized that paternal caregivers' presence in the home (Figure 2)—as well as lower levels of paternal maladaptive emotion socialization practices (i.e., magnify, neglect, and punish) when a male caregiver was present—would attenuate the magnitude of the relation between maternal emotion socialization practices and adolescent emotion regulation difficulties (Figure 3).



*Figure 1.* Hypothesized Serial Mediation Models

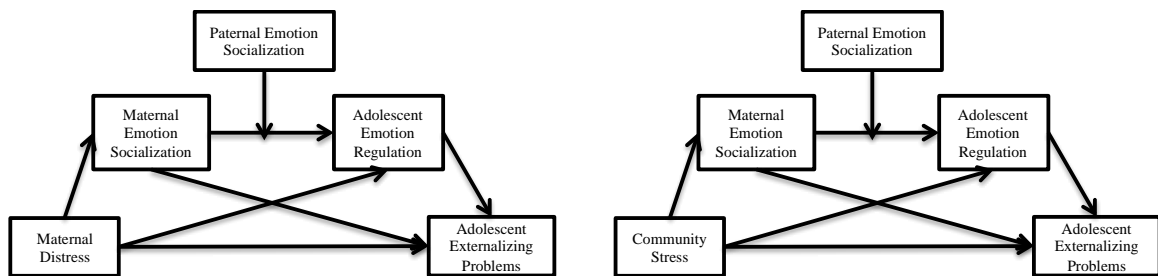
*Note.* Maternal distress composite includes maternal depression and maternal parenting stress. Each model was examined in three analyses, separate for Global Punish, Global Neglect, and Global Magnify, for the emotion socialization construct, resulting in a total of six separate analyses.





*Figure 2.* Hypothesized Serial Mediation Models with Family Structure as a Moderator

*Note.* Maternal distress composite includes maternal depression and maternal parenting stress. Family structure is conceptualized as single- versus two-parent homes. Each model was examined in three analyses, separate for Global Punish, Global Neglect, and Global Magnify, for the emotion socialization construct, resulting in a total of six separate analyses.



*Figure 3.* Hypothesized Serial Mediation Models with Paternal Emotion Socialization as a Moderator

*Note.* This model was examined when both a maternal and paternal caregiver are present in the home. Maternal distress composite includes maternal depression and maternal parenting stress. Each model was examined in three analyses, separate for Global Punish, Global Neglect, and Global Magnify, for the emotion socialization construct. For each analysis, the included paternal emotion socialization practices subscale corresponded with the examined maternal emotion socialization subscale, resulting in a total of six separate analyses.

## CHAPTER II – METHOD

### Participants

For the current study, inclusion criteria required that caregivers must be female and the primary caregiver of a child who was between the ages of 11 and 17. Additionally, for adolescents to be included in the study, they must have been between the ages of 11 and 17 as well as free from a diagnosis of Autism Spectrum Disorder or Intellectual Developmental Disorder. An income bracket ratio (i.e., 35% of sample in the \$0-\$24,999 range, 35% in the \$25,000-\$49,000 range, and 30% in the \$50,000 and above range) was established to ensure that adequate variability in family income was established; thus, participants were screened out of the study if their income fell into an income bracket already filled.

Caregivers were recruited through Qualtrics, an online data management company. Qualtrics utilizes paneling partners, online platforms for which individuals sign-up to participate. Individuals provide demographic and other, various information upon signing up with a panel partner. Following sign-up, individuals receive notifications when studies for which they meet criteria become available. A total of 793 caregivers were recruited for the study, nationwide, through Qualtrics. Of the 793 recruited participants, 210 participants did not move past the consent information. An additional 33 participants denied consent and, thus, did not complete the survey. Therefore, 550 caregivers initiated the survey and were routed into the screening criteria questions.

Screening criteria required that the caregiver was female with an adolescent aged 11 to 17 years who could also participate in the study. Furthermore, sampling was divided into three socioeconomic status (SES) brackets to assure variability in SES (see

Procedure section). Seven participants were routed out of the survey screening due to not having any children. Additionally, 42 caregivers indicated that they did not have a child between the ages of 11 and 17, and thus, were routed out of the survey screening. An additional 21 participants were routed out of the survey screening due to responding as being a male caregiver. This resulted in 480 maternal caregivers being screened into the remainder of the survey.

Of the 480 participants who were administered the full survey, 107 caregivers were routed out of the study due to careless responding (i.e., failing quality assurance items, such as incorrectly answering a question with the directions of “Please mark *Not at All True* for this item.”). An additional 129 caregiver surveys were discontinued due to being in an income bracket in which the parameter was already filled (e.g., a participant was in the \$50,000 and above income level; however, the maximum number of participants allowed in that bracket had been met). This resulted in 244 completed maternal caregiver responses that were retained for the study.

Of the 244 completed maternal responses, 241 adolescents initiated the adolescent portion of the survey. All adolescents assented to the study (i.e., none were routed out due to denying assent). However, of the 241 adolescent participants, 11 were routed out of the study due to careless responding (i.e., names not matching the maternal caregiver response, failing a quality assurance item). This resulted in 230 completed adolescent surveys, resulting in 230 complete dyad responses. Of the 230 completed dyads, 23 were excluded from the final sample due to failing a dyad quality assurance item (i.e., discrepancy in response on presence of a paternal caregiver). Thus, there were a total of 207 dyads retained for the current study.

The final data set included a total of 207 participants with ages ranging from 11 to 17 years old. However, only 206 participants were included in the analyses for the current study (refer to data screening regarding exclusion of one additional participant for extreme scores; adolescent mean age = 14.18,  $SD = 1.90$ ; maternal caregiver mean age = 41.08,  $SD = 7.47$ ; see Table 1).

Table 1

*Descriptives of Demographic Data*

Child Demographics	<i>n</i>	% of sample
Age		
11	20	9.7
12	27	13.1
13	35	17.0
14	29	14.1
15	32	15.5
16	35	17.0
17	28	13.6
Gender		
Male	106	51.5
Female	100	48.5
Race		
White	158	76.7
Black	14	6.8
Hispanic	21	10.2
Asian	2	1.0
Mixed	10	4.9
Other	1	.5
Caregivers	<i>n</i>	% of sample
Race		
White	169	82.0
Black	11	5.3
Hispanic	19	9.2
Asian	2	1.0

Table 1 (continued).

Mixed	4	1.9		
Other	1	.5		
Marital Status				
Married	120	58.3		
Separated	6	2.9		
Divorced	32	15.5		
Widowed	8	3.9		
Not-married/ Living Alone	27	13.1		
Not-married/ Living with Someone	13	6.3		
Relation to Adolescent				
Biological mother	194	94.2		
Adoptive mother	6	2.9		
Stepmother	6	2.9		
Family Structure				
Single-parent	73	35.4		
Two-parent	133	64.6		
Income				
0-4,999	5	2.4		
5,000-9,999	8	3.9		
10,000 - 14,999	11	5.3		
15,000 - 24,999	47	22.8		
25,000 - 34,999	27	13.1		
35,000 - 49,999	45	21.8		
50,000 - 74,999	24	11.7		
75,000 - 99,999	20	9.7		
>100,000	19	9.2		
Education				
Some High School	5	2.4		
High School Graduate	44	21.4		
Some College	94	45.6		
Bachelor's Degree	50	24.3		
Graduate Degree	13	6.3		
Spouse's Education			---	---
Junior High School	1	.8		
Some High School	10	7.5		
High School Graduate	39	29.3		
Some College	51	38.3		
Bachelor's Degree	23	17.3		
Graduate Degree	9	6.8		

Total N = 206.

## Measures

### *Demographics*

A demographic questionnaire (Appendix A) was administered to parents to obtain general descriptive information about the youth and caregiver(s). Information such as the participants' age, grade, and gender was gathered along with information such as who lives in the home. Demographic and socioeconomic data about each participant and caregiver were obtained. For the purposes of correlational and path analysis, the reported race of the child was dichotomized by the researcher into white versus non-white due to small numbers of participants in the non-white categories.

### *Maternal Depression*

The Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995) is a 42-item measure that was used to assess maternal depression. For the current study, only the 14 depression items (e.g., "I felt down-hearted and blue," "I felt I was pretty worthless," "I found it difficult to work up the initiative to do things") were included, and the time period was changed from "over the past week" to "over the past six months." The time period was modified in this way to assess more chronic/long-term symptoms related to depression. Maternal caregivers responded to behaviors and statements on a scale from 0 to 3 (0 = *Did not apply to me at all* to 3 = *Applied to me very much, or most of the time*). The DASS has strong convergent and discriminant validity with both the Beck Depression Inventory and the Beck Anxiety Inventory (Antony, Bieling, Cox, Enns, & Swinson, 1998; Lovibond & Lovibond, 1995). Mothers completed the depression scale of the DASS as one of the predictors (i.e., contributing to the maternal distress

composite). Internal reliability proved acceptable within the current sample (i.e., Cronbach  $\alpha = .98$ ).

### *Parenting Stress*

The Parenting Stress Scale, an 18-item measure, was used to measure stress specifically related to parenting (Berry & Jones, 1995). Maternal caregivers rated statements regarding their interactions with and feelings about their children (e.g., “Caring for my child(ren) sometimes takes more time and energy than I have to give”) on a 5-point scale (1 = *Strongly disagree*; 2 = *Disagree*; 3 = *Undecided*; 4 = *Agree*; 5 = *Strongly agree*). This measure has demonstrated good internal consistency (Cronbach  $\alpha = .83$ ). Additionally, internal consistency was considered acceptable within the current sample (i.e., Cronbach  $\alpha = .88$ ). Mothers completed the Parenting Stress Scale as one of the predictors (i.e., contributing to the maternal distress composite).

### *Neighborhood/Environmental Stress*

The Community Youth Development Study (CYDS) Community and Neighborhood Measure (Tolan, Gorman-Smith, & Henry, 2001) was administered to the maternal caregiver to assess neighborhood and environmental stressors (e.g., “Dirty or unkempt front yards are a problem on my block,” “Gangs are a problem in my neighborhood,” “I would feel comfortable asking to borrow some food or a tool from people on my block”). Maternal caregivers rated items related to problems in their neighborhood and the support in their community on a 5-point scale (1 = *Strongly agree* to 5 = *Strongly disagree* or 1 = *A little* to 5 = *A serious problem*), or they rated items as *True* or *False* (e.g., “I have relatives in my neighborhood”). The CYDS Community and Neighborhood Measure contains several scales including the Community Involvement,

Community Support, Community Resources in Neighborhood, Perceived Community Problems, and Sense of Belonging scales. All scales are scored such that higher scores reflect more adaptive community environments except the Perceived Community Problems scale, in which higher scores reflect less adaptive community environments. Each scale, except Perceived Community Problems, was then multiplied by -1 so that higher scores reflected higher problems. These scales were then converted to standardized scores (i.e., first to *z*-scores then transformed to *T*-scores) and averaged to create a total score, representing community stress. Reliability with the CYDS Community and Neighborhood Measure is acceptable with subscale Cronbach's alphas ranging from .65 to .84 across scales with caregiver reporters (Sheidow, Gorman-Smith, & Tolan, 2001). Data from the current study suggest acceptable internal consistency for the community stress composite (i.e.,  $\alpha = .84$ ). Mothers completed the CYDS Community and Neighborhood Measure as one of the predictors.

#### *Adolescent Externalizing Behaviors*

The Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997, 2001; Goodman, Meltzer, & Bailey, 1998) is a 30-item measure of youth behavior. Respondents rate each item as *Not True*, *Somewhat True*, or *Certainly True*. The SDQ is composed of 5 separate factors [i.e., Emotion Symptoms, Conduct Problems, Hyperactivity-Inattention, Peer Problems, and Prosocial Behavior; Cronbach  $\alpha$  for combined factors scale (i.e., overall score) = .73; Goodman, 2001] that can also be combined for a total score; however, only the Conduct Problems scale was used in a composite (explained below) to measure adolescent externalizing behaviors. Internal consistency of the Conduct Scale on the SDQ resulted in a Cronbach  $\alpha = .71$  for the



current study. Moreover, a conservative estimate of test-retest reliability conducted by Goodman (2001) revealed that the SDQ shows fair stability with a mean correlation of .62. Additionally, the interrater agreement proved to be satisfactory. Individuals in the extreme percentage of problems on the SDQ (10% of sample) were shown to be at increased risk for psychiatric problems, highlighting the validity of the SDQ. Moreover, Goodman (1997) examined the total scores of the SDQ and the Rutter questionnaire to establish if the SDQ could assess psychological symptoms in a similar fashion as the Rutter questionnaire. Goodman (1997) found that both measures were equally able to discriminate between psychiatric and dental clinic attenders.

The Parent-rating scale for Reactive and Proactive Aggression (PRPA, Kempes, Matthys, Maassen, van Goozen, & van Engeland, 2006), an 11-item aggression measure, was used as an additional measure of externalizing behaviors for children. Maternal caregivers were asked to rate items on a 5-point Likert scale (i.e., *1 = never true* to *5 = always true*). Items addressed proactive aggression (e.g., *My child threatens or pesters others in order to get his/her own way*) as well as reactive aggression (e.g., *If my child is challenged or pestered, he/she reacts immediately and impulsively*). Examination of the psychometrics of the PRPA revealed acceptable internal consistency for both scales (i.e., Cronbach  $\alpha = .91$  for proactive aggression and  $.81$  for reactive aggression; Kempes et al., 2006). Similarly, for the current study, Cronbach alphas of  $.84$  and  $.91$  were found for proactive and reactive aggression, respectively. Moreover, scores on the PRPA were correlated in the expected direction with other related constructs such as hostile attributions (i.e., individuals who were higher in reactive aggression endorsed more hostile attributions; Kempes et al., 2006).

Mothers completed the SDQ and the PRPA to form a composite for the criterion variable. Specifically, the Conduct Problems scale from the SDQ and the Aggression scores from the PRPA were standardized (i.e., first to *z*-score, then transformed to *T*-scores) and averaged to create a single externalizing behaviors score. *T*-scores were used to increase the ease of interpretability by avoiding negative scores. This externalizing behaviors composite score served as the main criterion variable of interest.

#### *Emotion Socialization Practices*

The Emotions as a Child Scales (EAC; O’Neal & Magai, 2005), a 64-item measure of emotional socialization practices, was used to measure parental emotion socialization practices. The measure requires child/adolescent participants to rate emotion socialization practices of their parents (e.g., “She understands why you are sad,” “She tells you not to worry”) on a 7-point scale (1 = *Not at all like my mother* to 7 = *Exactly like my mother*). Youth completed the measure on their maternal caregiver’s emotion socialization practices, and if a paternal caregiver was present, youth also (separately) reported on their paternal caregiver’s emotion socialization practices. Ratings of emotion socialization practices are made in the context of Sadness, Anger, Fear, and Shame. Ratings across these four contexts were then composited to yield global scores, including Global Magnify (Cronbach  $\alpha = .66$ ), Global Neglect (Cronbach  $\alpha = .75$ ), Global Punish (Cronbach  $\alpha = .72$ ), Global Override (Cronbach  $\alpha = .80$ ), and Global Reward (Cronbach  $\alpha = .93$ ). Similar internal consistency was found in the current study for both maternal and paternal emotion socialization practices (see Table 2).

For each caregiver, the EAC subscales Global Magnify, Global Neglect, and Global Punish were used. These three composites were the focus due to their statistically

significant relation with externalizing behaviors ( $r = .27$ ,  $r = .36$ , and  $r = .41$ , respectively; O’Neal & Magai, 2005). Adolescents completed the EAC as one of the mediators (for maternal emotion socialization) and moderator (for paternal emotion socialization). Maternal emotion socialization (as measured by the adolescents’ report on the EAC) was also a criterion variable in testing one of the hypotheses.

### *Emotion Regulation*

The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004), a 36-item measure, was administered to youth to assess youths’ emotion regulation skills. Items measure how often youth engage in different behaviors or have certain feelings/thoughts/behaviors (e.g., “When I am upset, I feel guilty for feeling that way”). Youth responded on a scale of 1 to 5 where 1 is *almost never* (0-10%), 2 is *sometimes* (11-35%), 3 is *about half the time* (36-65%), 4 is *most of the time* (66-90%), and 5 is *almost always* (91-100%).

The total DERS score was used, (Cronbach  $\alpha = .93$ ; Gratz & Roemer, 2004; similar internal consistency was shown in the current study, see Table 2). The DERS was originally designed for adults; however, there has been sufficient evidence that it is a valid and reliable measure to use with adolescents. Neumann and colleagues (2010) conducted a confirmatory factor analysis with a Dutch community sample of adolescents ( $N = 870$ ; ages from 11 to 17 years;), which supported the same six-factor structure for adolescents that Gratz and Roemer (2004) found for adults. Internal consistency was acceptable with Cronbach’s alphas ranging from .72 to .87 (Neumann, van Lier, Gratz, & Koot, 2010). Subscales were differentially associated with externalizing and internalizing problems, in the expected directions, which the authors reported as evidence for construct

validity. Adolescents completed the DERS as one of the mediators (i.e., adolescent emotion regulation difficulties). Adolescent emotion regulation difficulties (as measured by the DERS) was also a criterion variable in testing one of the hypotheses.

### Procedure

All procedures were approved by the University IRB prior to recruitment or data collection (Appendices B, C, and D). Participants were recruited through an online data management company (i.e., Qualtrics) with existing established relations with various partners. Qualtrics utilized their panel partners (e.g., online platforms in which people have signed up to complete studies), maximizing the participant pool for recruitment, to send requests by electronic communication to participants to complete the study.

Qualtrics employed strategies to recruit only maternal caregivers with a child between the ages of 11 and 17 years and an equal amount of responses across socioeconomic status. Specifically, they recruited equally from three income brackets (i.e., \$0-\$24,999, \$25,000-\$49,999, \$50,000 and above) to assure variability in a crucial demographic variable for this study. Participants were provided with a monetary incentive after completing the study. The exact amount of the incentive for each dyad varied depending on the particular paneling partner given that each paneling partner determines their own incentive needed to maximize recruitment for the targeted population. However, the incentive ranged between \$5 to \$12 per dyad.

Participants were youth between the ages of 11 and 17 years, along with a maternal primary caregiver. Participants were asked to complete the measures online through a secure online data collection platform (Qualtrics). Informed consent (Appendix E) from the parent was obtained prior to any data being collected from the parent or

adolescent, and assent from the adolescent (Appendix F) was obtained prior to any data collection with the adolescent. Following consent, parents completed the demographic questionnaire, DASS, PSS, CYDS Community and Neighborhood Measure, SDQ, and PRPA. Following parental consent and adolescent assent, adolescents completed the EAC for their mother as well as for their father (if present in the home) and DERS. Caregivers and adolescents also responded to items unrelated to demographics and measured constructs for quality assurance. Items were randomly placed throughout both the caregiver and adolescent surveys and required the respondent to answer in a specific way (e.g., type the word “purple”) to ensure individuals were attentive to the questions and responding in meaningful ways. Although the current study considered emotional factors for both caregivers when there is more than one identifiable primary caregiver, data also were collected on single-parent homes to provide variability in family structure and to maximize the generalizability of the study findings. Approximately one-third of the recruited sample ( $N = 73$ ) were single-parent homes, and the other two-thirds ( $N = 133$ ) were two-parent heterosexual homes.

## CHAPTER III – RESULTS

### Preliminary Data Analyses

#### *Data Screening*

Data were screened to identify and correct any irregularities in the distribution of variables (i.e., inspect outliers, *means*, *ranges*, and *standard deviations*). One case was excluded from the analyses due to multiple extreme scores. Another seven cases were classified as having extreme outliers on a construct. Outliers were identified by having extreme standardized scores that were substantially higher than the next score (e.g., one standard deviation) or they were well above four standard deviations from the sample mean (e.g., *z*-score above 4.5). Scores were not eliminated simply because they were above four standard deviations, given the distribution of our sample. Rather, if a case exhibited scores well above four standard deviations above the mean or showed a significant increase in data points (e.g., an increase in a standard deviation from the data point below it), it was winsorized (Field, 2009). Specifically, extreme scores were truncated to be equal to the next lowest score for that item. The decision to truncate scores was made given the additional noise the extreme scores introduced to the analyses.

Following composite creation where applicable (see below), skewness and kurtosis were examined for all continuous measures to make decisions about the treatment of nonnormal distributions (Table 2). Many of the emotion socialization scales as well as the adolescent externalizing scale had a slightly elevated skew but the magnitude was deemed acceptable, particularly given that the base rate of clinically significant symptoms in a community sample was not expected to be high. Additionally, the central tendencies of the scales were equivalent to previous studies (Essau et al.,

Table 2

*Descriptive Statistics for Continuous Variables of Interest*

Measure	<i>N</i>	Mean	Range	Standard Deviation	Skew	Kurtosis	Coefficient Alpha
Maternal Distress <sup>a</sup>	206	50.00 <sup>c</sup>	44.47	8.42.	1.01	1.02	.59
Community Stress	206	50.00 <sup>c</sup>	31.38	6.84	0.00	-0.39	.84
Maternal Magnify	206	2.71	5.29	1.11	0.55	.09	.76
Maternal Punish	206	1.57	2.83	.59	1.83	3.58	.85
Maternal Neglect	206	1.47	3.92	.80	2.53	6.89	.94
Paternal Magnify	133	2.02	4.00	.98	0.93	0.25	.76
Paternal Punish	133	1.56	3.00	.68	1.99	3.95	.82
Paternal Neglect	133	2.01	6.33	1.36	1.47	1.84	.96
Adolescent Emotion Regulation	206	82.09	120.00	25.47	0.47	1.02	.97
Adolescent Externalizing Problems <sup>b</sup>	206	50.00 <sup>c</sup>	41.29	8.97	1.99	4.03	.88

<sup>a</sup>Variable is a composite created from scores on the DASS Depression scale and the overall score on the PSS. Scores were standardized to have unitary metrics. See Measures section for alpha coefficients for the individual scales.

<sup>b</sup>Variable is a composite created from scores on the SDQ Conduct Problems scale, the PRPA Reactive scale, and the PRPA Proactive scale. Scores were standardized to have unitary metrics.

See Measures section for alpha coefficients for the individual scales.

<sup>c</sup>Statistic is a *T*-score. All other statistics are raw scores

2012; He, Burstein, Schmitz, & Merikangas, 2013; Kempes et al., 2006, Klimes-Dougan et al., 2007a; Mellor, Wong, & Xu, 2011; Norton, 2007; Osman et al., 2012; Shea, Tennant, & Pallant, 2009).

### *Composite Creation*

Many of the composites used scores with different metrics. To address this, scores were standardized before composite creation. Specifically, scores were first standardized by converting them to *z*-scores. Next, the scores were converted to *T*-scores to aid interpretation (e.g., means above zero and ranges without negative values).

Composite scores for maternal distress (maternal depression, maternal parenting stress) as well as community stress (neighborhood/environmental stress) were created by standardizing variables and averaging them. The depression scale from the DASS and the total score from the Parenting Stress scale were averaged together to create the parenting distress composite (correlations between maternal depression and parenting stress indicated a composite creation was suitable; see Table 3). The five scales from the CYDS Community and Neighborhood Measure were standardized and then averaged to create the community stress composite (see Table 4 for intercorrelations among subscales on the CYDS). Correlations between maternal distress variables and community stress variables indicated that an overall family composite variable would not be suitable. Specifically, the magnitude of the relation between maternal distress and community stress variables were weak and nonsignificant. Moreover, a confirmatory factor analysis indicated poor fit, RMSEA = .282, CI = .217, .352,  $p < .001$ ; GFI = .854; AGFI = .70.



Table 3

*Zero-Order Correlations among Demographics and Variables of Interest*

	1	2	3	4	5	6	7	8	9
1. Maternal Age <sup>a</sup>	-								
2. Adolescent Age <sup>a</sup>	.32**	-							
3. Adolescent Gender <sup>a</sup>	-.20**	-.03	-						
4. Adolescent Race <sup>a</sup>	-.04	-.02	-.03	-					
5. Income <sup>a</sup>	.04	-.01	-.00	.07	-				
6. Maternal Distress <sup>a</sup>	-.13	.02	.10	.06	-.21**	-			
7. Community Stress <sup>a</sup>	-.09	.00	.05	.10	-.18*	.24**	-		
8. ER Problems <sup>a</sup>	-.27**	-.15*	.03	.07	-.07	.58**	.13	-	
9. Externalizing Problems <sup>a</sup>	-.16*	-.01	-.01	.04	-.09	.47**	.10	.61**	-
10. Maternal Magnify <sup>a</sup>	-.15*	-.06	.01	.08	-.00	.35**	.06	.37**	.36**
11. Maternal Punish <sup>a</sup>	-.07	-.08	-.07	.18*	.00	.21**	.11	.26**	.34**
12. Maternal Neglect <sup>a</sup>	.08	.14*	.02	.15*	.05	.14*	.02	.10	.19**
13. Paternal Magnify <sup>b</sup>	-.03	.02	-.03	.16	.08	.14	-.03	.18*	.26**
14. Paternal Punish <sup>b</sup>	.06	-.13	-.13	.19*	.06	.08	.05	.25**	.33**
15. Paternal Neglect <sup>b</sup>	.08	.08	.11	.05	.01	.20*	-.07	.29**	.30**

Note. ER = Emotion Regulation.

Male = 0, Female = 1. White = 0, Nonwhite = 1.

<sup>a</sup> *N* = 206, <sup>b</sup> *N* = 133.

\* *p* < .05. \*\* *p* < .01. \*\*\* *p* < .001

A composite score for adolescent externalizing behaviors was created by standardizing variables and averaging them. Specifically, the externalizing scale from the SDQ conduct problems scale, PRPA reactive scale, and the PRPA proactive scale were standardized to create a common unit of measurement. Following the standardization of the three scores (i.e., conduct problems from the SDQ and the reactive and proactive scales from the PRPA), the new standardized scores were then averaged to create an overall Externalizing Composite score for each adolescent. Correlations between PRPA reactive and proactive subscales and the SDQ conduct problems scale indicated a composite creation was suitable (i.e.,  $r = .67$  and  $.73$ ,  $p < .001$ , respectively).

#### *Additional Preliminary Data*

For emotion socialization practices, Global Magnify, Global Neglect, and Global Punish were used due to previous research highlighting their importance in predicting externalizing behaviors (O’Neal & Magai, 2005). All of the analyses described below were conducted with each parenting socialization practice considered separately. This approach (rather than creating a composite emotion socialization scale) was used to determine if each emotion socialization practice supported the hypothesized model relative to the adolescent outcomes.

#### *Correlations*

A correlation matrix was inspected to identify any problems related to multicollinearity and singularity. Correlations among variables did not reveal any correlation greater than .90, suggesting that multicollinearity and singularity problems were not of concern (intercorrelations described in further detail below). Zero-order correlations were also examined to identify relations among the key variables of interest.

Correlations also were conducted to identify how demographic variables (e.g., gender, age, race) related to maternal emotion socialization practices (mediator), adolescent emotion regulation difficulties (mediator), or adolescent externalizing behaviors (final criterion), given that each of these three variables serve as a criterion variable at some stage in the serial mediation model. Categorical variables were dichotomized before being included in the correlation (or later path) analyses.

Zero-order correlations among variables included in the current study are reported in Tables 3, 4, and 5. Table 3 provides the intercorrelations among the demographic variables and the variables of interest in the models; Table 4 provides the intercorrelations among the community stress variables; and Table 5 provides the intercorrelations among the emotion socialization practices. There were significant positive associations between externalizing behaviors and all other variables of interest except community stress. Additionally, emotion regulation difficulties were significantly and positively correlated with all variables of interest except community stress and maternal neglect. Maternal distress was significantly and positively associated with community stress, emotion regulation difficulties, externalizing behaviors, all maternal emotion socialization practices, and paternal neglect.

Correlations also were examined among demographic variables (i.e., child's race dichotomized, gender, and age; maternal income and age), and variables that served as criterion variables at some point in the serial mediation model (i.e., maternal emotion socialization practices, adolescent emotion regulation difficulties, and adolescent externalizing behaviors) to identify covariates for each model (Table 3). Identified covariates were entered into the original path model for each analysis conducted, when

indicated. Specifically, maternal age was negatively related to maternal magnify, adolescent emotion regulation difficulties, and adolescent externalizing problems; adolescent age was negatively associated with adolescent emotion regulation and maternal neglect; and adolescent race (i.e., non-white) was related to increased maternal punishing and maternal neglecting practices. Adolescent gender and family income were not significantly correlated with any of the mediator or criterion variables (although, of note, family income was negatively correlated with maternal distress and community stress). Based on these demographic correlations, adolescent and maternal ages were included as covariates for all models, and adolescent race was included as an additional covariate for any model that included the emotion socialization practices of neglect or punish.

Table 4

*Zero Order Correlations for Community Stress Variables*

	1	2	3	4
1.Problems	-			
2.Resources	.17*	-		
3.Involvement	.16*	.26**	-	
4.Belonging	-.08	.32**	.64**	-
5.Support	.07	.23**	.86**	.74**

*Note.*  $N = 206$

\*  $p < .05$ . \*\*  $p < .01$ .

Table 5

*Zero-order Correlations for Emotion Socialization Variables.*

	1	2	3	4	5	6
1. Maternal Magnify <sup>a</sup>	-					
2. Maternal Punish <sup>a</sup>	.52**	-				
3. Maternal Neglect <sup>a</sup>	.30**	.39**	-			
4. Paternal Magnify <sup>b</sup>	.65**	.55**	.25**	-		
5. Paternal Punish <sup>b</sup>	.37**	.73**	.33**	.62**	-	
6. Paternal Neglect <sup>b</sup>	.20*	.20*	.42**	.17	.32**	-

Note. <sup>a</sup>N = 206, <sup>b</sup>N = 133

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

### Primary Analyses

#### *Overall Serial Mediation Models*

Before path analyses were conducted, the construct of emotion regulation was scaled by dividing the variable by a constant of three. This procedure was used to reduce the discrepancy of variance between the variables so that the models could be analyzed. A constant of three was determined to sufficiently reduce the amount of variance and to allow the models to converge. All subsequent analyses used the scaled emotion regulation variable.

To test the hypothesized serial mediation models, the lavaan package (Rosseel, 2012) for R (R Development Core Team, 2008) was used, due to lavaan's ability to analyze multiple groups and relatively recent updated package script. The following paths were tested: (1) the total and direct effects of maternal distress or community stress (examined as predictors in separate models) on adolescent externalizing behaviors as well as their indirect effect on adolescent externalizing behaviors through (a) maladaptive maternal emotion socialization practices (i.e., magnify, neglect, and punish; with each

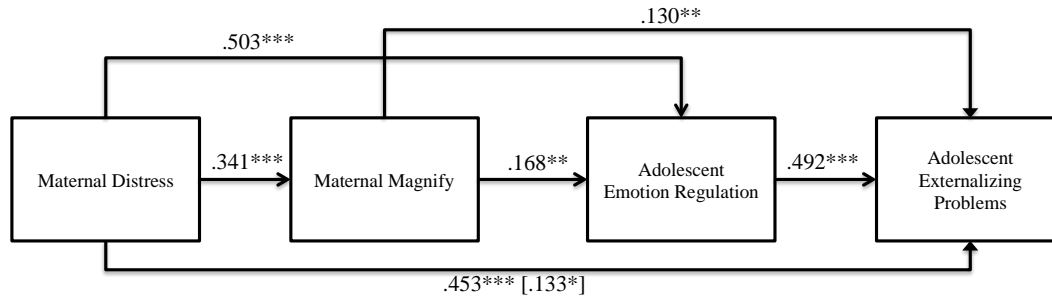
socialization practice examined separately), (b) adolescent emotion regulation difficulties, and (c) both maternal emotion socialization practices and adolescent emotion regulation difficulties; (2) the total and direct effects of maternal distress or community stress (examined as separate models) on adolescent emotion regulation difficulties as well as their indirect effect on adolescent emotion regulation difficulties through maladaptive maternal emotion socialization practices; and (3) accounting for maternal distress or community stress, the total and direct effects of maladaptive maternal emotion socialization practices on adolescent externalizing behaviors as well as its indirect effect on adolescent externalizing behaviors through adolescent emotion regulation difficulties. For every model in the initial serial mediation model,  $N$  was 206.

*Maternal distress as a predictor.* The following analyses examined maternal distress as the predictor variable.

#### *Magnify*

With maternal distress as the predictor, maternal age and adolescent age were included as covariates in the magnify model given their association with the endogenous variables (Table 3). Resulting parameters (see Figure 4 and Table 6) indicated that (1) maternal distress directly predicted magnifying practices, emotion regulation difficulties, and externalizing problems; (2) magnifying practices predicted emotion regulation difficulties and externalizing problems; and (3) emotion regulation difficulties predicted externalizing problems. Additionally, the indirect effects of (1) maternal distress on externalizing problems through magnifying practices; (2) maternal distress on externalizing problems through emotion regulation difficulties; and (3) maternal distress on externalizing problems through both (a) magnifying practices and (b) emotion

regulation difficulties were all significant (i.e., did not include the value of zero in the 95% confidence intervals).



*Figure 4.* Path analysis model with maternal distress as the predictor and magnifying emotion socialization practices as the first-stage mediator.

Note. Maternal age and adolescent age were accounted for as covariates in the figure. Statistics represented are standardized coefficients. Statistic in brackets represents the direct effect. See Table 6 for indirect effects.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 6

*Path Coefficients for Mediation Models with Maternal Distress as the Predictor*

Regression paths	Magnify ES <sup>a</sup>	Neglect ES <sup>b</sup>	Punish ES <sup>c</sup>
<u>Externalizing Problems with</u>			
1. Emotion Regulation Difficulties	.492***	.515***	.486***
2. Emotion Socialization <sup>d</sup>	.130**	.112 <sup>†</sup>	.196*
3. Maternal Distress	.133*	.149*	.142*
4. Adolescent Age	.080	.066	.091 <sup>†</sup>
5. Maternal Age	-.022	-.038	-.033*
6. Adolescent Race	---	-.015	-.031
<u>Emotion Regulation Difficulties with</u>			
7. Emotion Socialization <sup>d</sup>	.168**	.045	.124*
8. Maternal Distress	.503***	.552***	.534***
9. Adolescent Age	-.105 <sup>†</sup>	-.116 <sup>†</sup>	-.101
10. Maternal Age	-.140*	-.158**	-.154**
11. Adolescent Race	---	.019	.004

Table 6 (continued).

<u>Emotion Socialization<sup>d</sup> with</u>			
12. Maternal Distress	.341***	.141*	.200**
13. Adolescent Age	-.033	.117	-.077
14. Maternal Age	-.094	.065	-.011
15. Adolescent Race	---	.150 <sup>†</sup>	.170*
16. <u>Total Effect</u>	.453***	.452***	.452***
<u>Indirect Effects</u>			
17. MD → ES <sup>d</sup> → Externalizing	.045 [.012, .093]	.016 [.000, .053]	.039 [.009, .108]
18. MD → ER → Externalizing	.247 [.173, .364]	.285 [.204, .410]	.260 [.184, .378]
19. MD → ES <sup>d</sup> → ER → Externalizing	.028 [.007, .061]	.003 [-.009, .014]	.012 [.001, .030]

Note. ES= Emotion Socialization, ER = Emotion Regulation Difficulties, MD = Maternal Distress, --- = Not analyzed in model,

Statistics in brackets represent bootstrap confidence intervals. All other statistics represent standardized path coefficients.

<sup>a</sup> Model with magnify emotion socialization practices as the first mediator affecting path parameters for 2, 7, 17, and 19 in table.

<sup>b</sup> Model with neglect emotion socialization practices as the first mediator affecting path parameters for 2, 7, 17, and 19 in table.

<sup>c</sup> Model with punish emotion socialization practices as the first mediator affecting path parameters for 2, 7, 17, and 19 in table.

<sup>d</sup> Emotion socialization represents a place holder for the specific emotion socialization examined in each model (i.e., for Model with <sup>a</sup>, the specific emotion socialization process was Magnify).

<sup>†</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Given the cross-sectional nature of the current study, several *post hoc* analyses were conducted to examine alternative sequences of the magnify model. Post-hoc analyses indicated that although the hypothesized model was significant, alternative sequences of the same variables were significant as well. Specifically, adolescent emotion regulation and magnify were interchangeable in their sequencing as mediators (i.e., the serial mediation of maternal distress → emotion regulation → magnify → externalizing behaviors) and yielded significant mediational effects. Moreover, adolescent externalizing problems and maternal distress were interchangeable as

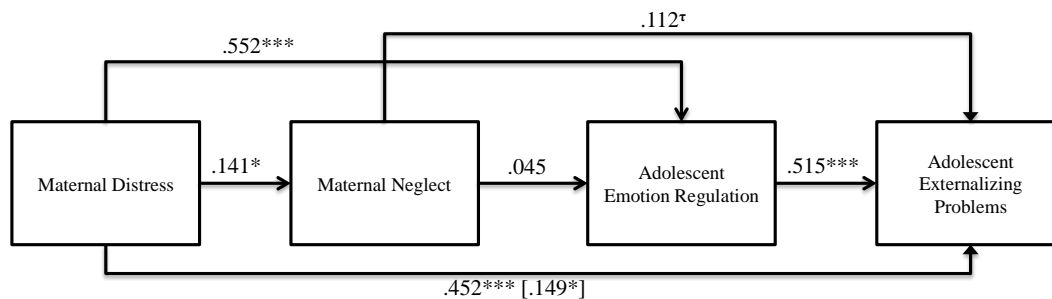


predictor and criterion variables (i.e., externalizing problems → magnify → emotion regulation → maternal distress) and yield significant results. Additionally, the serial mediation model involving emotion regulation as a predictor of maternal distress, then magnifying practices, then externalizing behaviors also was significant; however, the indirect effect of emotion regulation on externalizing behaviors through maternal distress was not significant. Finally, the model, in the complete reversed direction (i.e., externalizing behaviors predicting emotion regulation, predicting magnify, predicting maternal distress) showed significant sequential mediation as well; however, the indirect effect of externalizing behaviors on maternal distress through emotion regulation was not significant.

### *Neglect*

Maternal and adolescent age as well as adolescent race were included as covariates in the neglect model, given their association with the endogenous variables (Table 3). Resulting parameters (see Table 6 and Figure 5) indicated that (1) maternal distress directly predicted neglecting practices, emotion regulation difficulties, and externalizing problems; (2) neglecting practices marginally predicted externalizing problems (but not emotion regulation difficulties); and (3) emotion regulation difficulties predicted externalizing problems. Additionally, the indirect effects of (1) maternal distress on externalizing problems through neglecting practices and (2) maternal distress on externalizing problems through emotion regulation difficulties were both significant; however, the indirect effect of maternal distress on externalizing problems through both (a) neglecting practices and (b) emotion regulation difficulties, was not significant (i.e.,

included the value of zero in the confidence intervals). Thus, there was not support for the serial mediation model.



*Figure 5.* Path analysis model with maternal distress as the predictor and neglecting emotion socialization practices as the first-stage mediator.

*Note.* Maternal age, adolescent age, and adolescent race were accounted for as covariates in the figure. Statistics represented are standardized coefficients. Statistic in brackets represents the direct effect. See Table 6 for indirect effects.

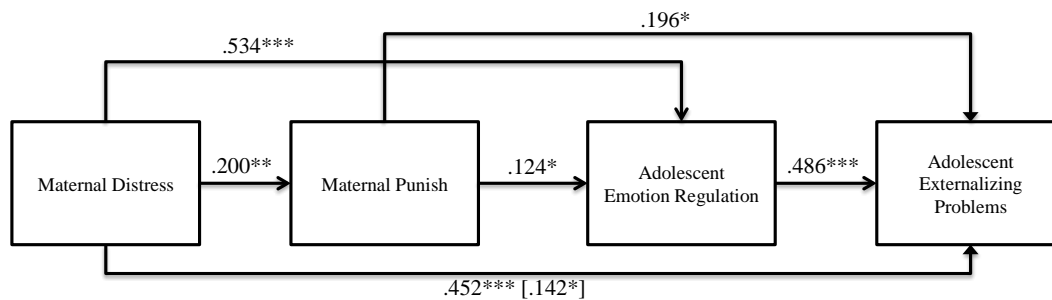
†  $p < .10$ . \*  $p < .05$ . \*\*\*  $p < .001$ .

Additional *post hoc* analyses were conducted to better understand the possible directionality/sequencing of the variables in the neglect model. These analyses indicated that adolescent externalizing problems and maternal distress were interchangeable as predictor and criterion variables when considering emotion regulation as a single mediator. Additionally, emotion regulation was predictive of externalizing behaviors through neglecting practices as well as maternal distress. Finally, emotion regulation was predictive of neglecting practices through externalizing problems.

### *Punish*

Maternal and adolescent age as well as adolescent race were included as covariates in the punish model, given their association with the endogenous variables (Table 3). All possible direct, indirect, and total effects were requested. Resulting parameters (see Table 6 and Figure 6) indicated that (1) maternal distress directly predicted punishing practices, emotion regulation difficulties, and externalizing

problems; (2) punishing practices predicted emotion regulation difficulties and externalizing problems; and (3) emotion regulation difficulties predicted externalizing problems. Additionally, the indirect effects of (1) maternal distress on externalizing problems through punishing practices; (2) maternal distress on externalizing problems through emotion regulation difficulties; and (3) maternal distress on externalizing problems through both (a) punishing practices and (b) emotion regulation difficulties, were all significant (i.e., did not include the value of zero in the confidence intervals).



*Figure 6.* Path analysis model with maternal distress as the predictor and punishing emotion socialization practices as the first-stage mediator.

*Note.* Maternal age, adolescent age, and adolescent race were accounted for as covariates in the figure. Statistics represented are standardized coefficients. Statistic in brackets represents the direct effect. See Table 6 for indirect effects.

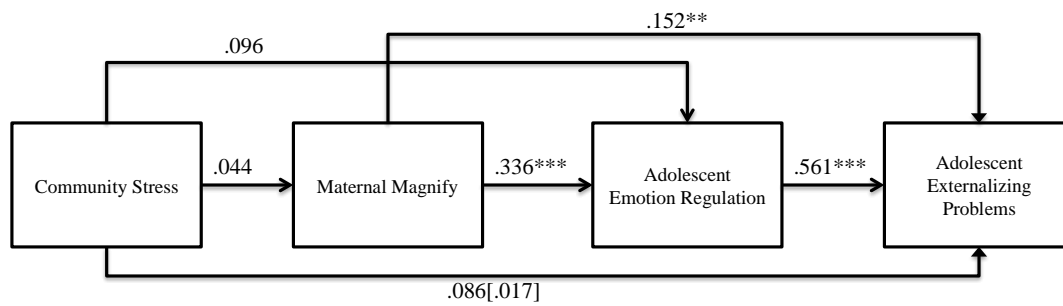
\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Additional *post hoc* analyses were conducted to better understand the possible directionality/sequencing of the variables in the punish model. These analyses indicated that the mediators were interchangeable in their sequencing (i.e., adolescent emotion regulation as mediator one and punish as mediator two) and yielded significant serial mediational effects. However, no other alternative models (e.g., adolescent externalizing as the predictor and maternal distress as the criterion) were significant.

*Community stress as a predictor.* The following analyses examined community stress as the predictor variable.

### Magnify

With community stress as the predictor, maternal and adolescent age were included as covariates in the magnify model given their association with the endogenous variables (see Table 3). Resulting parameters (see Figure 7 and Table 7) indicated that (1) community stress did not directly predict magnifying practices, emotion regulation difficulties, or externalizing problems; (2) magnifying practices predicted emotion regulation difficulties and externalizing problems; and (3) emotion regulation difficulties predicted externalizing problems. None of the indirect effects were significant (i.e., all included the value of zero in the confidence intervals).



*Figure 7.* Path analysis model with community stress as the predictor and magnifying emotion socialization practices as the first-stage mediator.

*Note.* Maternal age and adolescent age were accounted for as covariates in the figure. Statistics represented are standardized coefficients. Statistic in brackets represents the direct effect. See Table 7 for indirect effects

\*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 7

*Path Coefficients for Mediation Models with Community Stress as the Predictor*

Regression paths	Magnify ES <sup>a</sup>	Neglect ES <sup>b</sup>	Punish ES <sup>c</sup>
<u>Externalizing Problems with</u>			
1. Emotion Regulation Difficulties	.561***	.600***	.567***
2. Emotion Socialization <sup>d</sup>	.152**	.122 <sup>†</sup>	.205**
3. Community Stress	.017	.018	.005
4. Adolescent Age	.094 <sup>†</sup>	.080	.107*
5. Maternal Age	-.021	-.039	-.034
6. Adolescent Race	---	-.016	-.030
<u>Emotion Regulation Difficulties with</u>			
7. Emotion Socialization <sup>d</sup>	.336***	.123 <sup>†</sup>	.225*
8. Community Stress	.096	.105	.087
9. Adolescent Age	-.072	-.090	-.060
10. Maternal Age	-.183*	-.235**	-.222**
11. Adolescent Race	---	.026	.006
<u>Emotion Socialization<sup>d</sup> with</u>			
12. Community Stress	.044	.012	.088
13. Adolescent Age	-.011	.127 <sup>†</sup>	-.066
14. Maternal Age	-.142 <sup>†</sup>	.044	-.033
15. Adolescent Race	---	.156 <sup>†</sup>	.172*
16. <u>Total Effect</u>	.086	.083	.083
<u>Indirect Effects</u>			
17. CS → ES <sup>d</sup> → Externalizing	.007 [-.024, .041]	.001 [-.027, .033]	.018 [-.023, .083]
18. CS → ER → Externalizing	.054 [-.034, .178]	.063 [-.033, .201]	.049 [-.045, .179]
19. CS → ES <sup>d</sup> → ER → Externalizing	.008 [-.023, .055]	.001 [-.020, .016]	.011 [-.012, .048]

Note. ES= Emotion Socialization, ER = Emotion Regulation Difficulties, CS=Community Stress, --- = Not analyzed in model,

Statistics in brackets represent bootstrap confidence intervals. All other statistics represent standardized path coefficients.

<sup>a</sup> Model with magnify emotion socialization practices as the first mediator affecting path parameters for 2, 7, 17, and 19 in table.

<sup>b</sup> Model with neglect emotion socialization practices as the first mediator affecting path parameters for 2, 7, 17, and 19 in table.

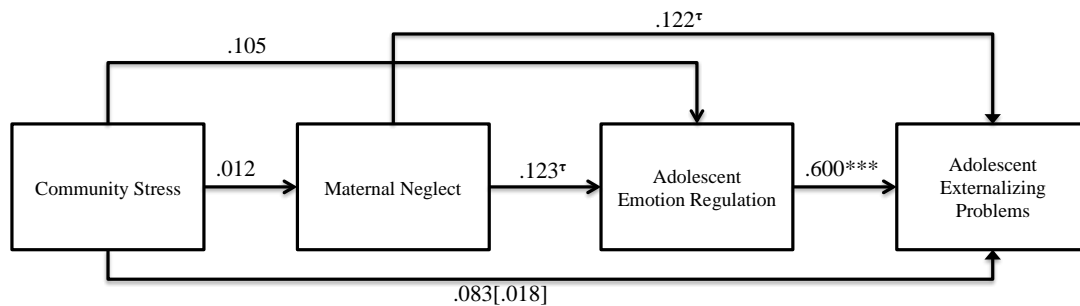
<sup>c</sup> Model with punish emotion socialization practices as the first mediator affecting path parameters for 2, 7, 17, and 19 in table.

<sup>d</sup> Emotion socialization represents a place holder for the specific emotion socialization examined in each model (i.e., for Model with <sup>a</sup>, the specific emotion socialization process was Magnify).

<sup>†</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

### *Neglect*

Maternal and adolescent age as well as adolescent race were included as covariates in the neglect model given their association with the endogenous variables (Table 3). Resulting parameters (see Table 7 and Figure 8) indicated that (1) community stress did not directly predict neglecting practices, emotion regulation difficulties, or externalizing problems; (2) neglecting practices marginally predicted emotion regulation difficulties and externalizing problems; and (3) emotion regulation difficulties predicted externalizing problems. None of the indirect effects were significant (i.e., all included the value of zero in the confidence intervals).



*Figure 8.* Path analysis model with community stress as the predictor and neglecting emotion socialization practices as the first-stage mediator.

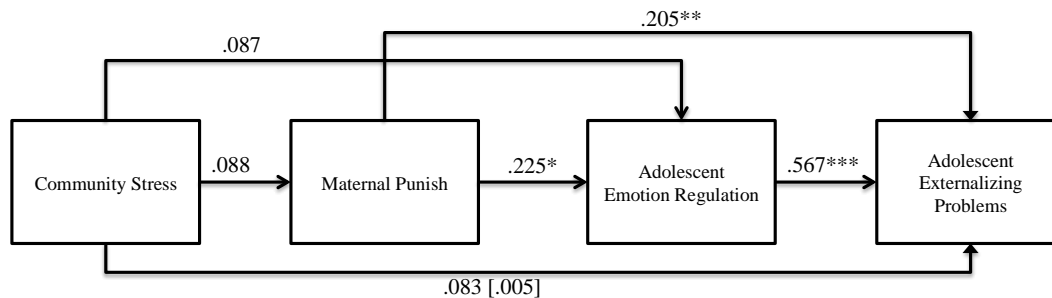
*Note.* Maternal age, adolescent age, and adolescent race were accounted for as covariates in the figure. Statistics represented are standardized coefficients. Statistic in brackets represents the direct effect. See Table 7 for indirect effects.

<sup>†</sup>  $p < .10$ . \*\*\*  $p < .001$ .

### *Punish*

Maternal and adolescent age as well as adolescent race were included as covariates in the punish model given their association with the endogenous variables (Table 3). Resulting parameters (see Table 7 and Figure 9) indicated that (1) community

stress did not directly predict punishing practices, emotion regulation difficulties, or externalizing problems; (2) punishing practices predicted emotion regulation difficulties and externalizing problems; and (3) emotion regulation problems predicted externalizing problems. None of the indirect effects were significant (i.e., all included the value of zero in the confidence intervals).



*Figure 9.* Path analysis model with community stress as the predictor and punishing emotion socialization practices as the first-stage mediator.

*Note.* Maternal age, adolescent age, and adolescent race were accounted for as covariates in the figure. Statistics represented are standardized coefficients. Statistic in brackets represents the direct effect. See Table 7 for indirect effects.

\*\*  $p < .01$ . \*\*\*  $p < .001$ .

### *Multigroup Model Comparisons for Family Structure*

To examine the differences in the serial mediation models between single-parent and two-parent homes, the full sample was divided into these naturally occurring groups, and the data underwent multi-group comparison analyses to test the hypothesis that a paternal caregiver's presence attenuates the relation between maladaptive maternal emotion socialization practices and adolescent emotion regulation difficulties when compared to single-parent homes. For every model, the total  $N$  was 206 (single-parent group  $N = 133$ , two-parent group  $N = 73$ ).

*Maternal distress.* Maternal and adolescent ages were included as covariates in the magnify model given their association with the endogenous variables (Table 3). First,

the model was specified so that it could freely associate between the two samples (see Table 8 for fit indices). Next, the model was specified to have all regression coefficient paths constrained to be equal in both samples. Following this specification, a chi-square difference test was conducted to analyze if the data fit worse when fully constrained rather than allowed to freely associate (i.e., indicating group differences). The resulting chi-square difference test,  $\Delta\chi^2 (12, N = 206) = 20.609, p = .056$ , indicated a trend toward significance, meaning that the model is possibly variant between groups.

Table 8

*Multi-group Comparisons Model Fit Statistics for Magnify*

	$\chi^2$	DF	$\Delta\chi^2$ p-value	CFI	RMSEA	RMSEA CI	RMSEA p-value
Model 1 <sup>a</sup>	.000	0	---	1.000	.000	.000-.000	1.000
Model 2 <sup>b</sup>	20.609	12	.056	.965	.083	.000-.143	.171
Model 3 <sup>c</sup>	.028	1	.869	1.000	.000	.000-.139	.883
Model 4 <sup>d</sup>	11.473	3	.009	.966	.166	.072-.272	.026
Model 5 <sup>e</sup>	1.618	2	.445	1.000	.000	.000-.183	.531
Model 6 <sup>f</sup>	7.378	2	.025	.978	.162	.049-.293	.051
Model 7 <sup>g</sup>	7.515	1	.006	.974	.252	.108-.432	.013
Model 8 <sup>h</sup>	5.038	1	.025	.984	.198	.057-.383	.044
Model 9 <sup>i</sup>	2.340	1	.126	.995	.114	.000-.313	.174
Model 10 <sup>j</sup>	.000	1	.961	1.000	.000	.000-.000	.997
Model 11 <sup>k</sup>	1.618	1	.203	.998	.077	.000-.287	.260

*Note.* Each model, following Model 1, is compared to Model 1 (i.e., a saturated model) with  $\chi^2$  of 0.000 and 0 degrees of freedom.

Thus, for each model, the  $\chi^2$  difference would be the  $\chi^2$  of the current model, given it is compared to a saturated model with a  $\chi^2$  of 0.00 (e.g., the  $\chi^2$  difference between Model 1 and Model 2 is 20.609, with a difference of 12 in degrees of freedom with a resulting  $p$ -value of .056). CI = confidence interval.  $\Delta\chi^2$  = chi-square difference.  $N = 206$ .

<sup>a</sup> Model 1; baseline comparison model. All regression coefficients are unconstrained.

<sup>b</sup> Model 2; all regression coefficients are constrained.

<sup>c</sup> Model 3; the direct effect of maternal distress on externalizing behaviors is constrained.

<sup>d</sup> Model 4; the serial mediation indirect effect (i.e., maternal distress → magnify → emotion regulation → externalizing behaviors) is constrained.



<sup>e</sup>Model 5; the mediation indirect effect of maternal distress→magnify→externalizing behaviors is constrained.

<sup>f</sup>Model 6; the mediation indirect effect of maternal distress→emotion regulation→externalizing behaviors is constrained.

<sup>g</sup>Model 7; the direct effect of magnify on emotion regulation is constrained.

<sup>h</sup>Model 8; the direct effect of maternal distress on emotion regulation is constrained.

<sup>i</sup>Model 9; the direct effect of emotion regulation on externalizing behaviors is constrained.

<sup>j</sup>Model 10; the direct effect of magnify on externalizing behaviors is constrained.

<sup>k</sup>Model 11; the direct effect of maternal distress on magnify is constrained.

To detect the specific areas in which the model is variant between samples, paths were independently constrained. Then the model was tested against the baseline model by utilizing a chi-square difference test. This method was followed for every new path-constrained model that was run (see Table 8 for all tests conducted and described below).

First, the direct effect was constrained to be equal between samples. Then a chi-square difference test between the baseline model (i.e., the fully unconstrained model) and the current model (i.e., direct effect constrained to be equal across groups) was conducted. The resulting model indicated that the direct effect was invariant between groups. Next, the serial mediation was examined and results indicated that the indirect effect was variant between groups, supporting a group difference in the serial mediation model.

To identify finer levels of variance between groups, stages of the indirect effect were examined (i.e., maternal distress→magnify→externalizing behaviors, maternal distress→emotion regulation difficulties→externalizing behaviors, respectively). When examining the indirect effect of maternal distress to externalizing behaviors through magnify, the model results indicated invariance. However, when examining the indirect effect of maternal distress to externalizing behaviors through emotion regulation difficulties, the model was variant between groups (i.e., there was a group difference).

Analyses also were conducted to understand the specific direct paths that differed among groups. First, given that it was hypothesized that family structure would have a moderating effect specifically on the path from magnify to emotion regulation difficulties, that path was constrained. Results indicated that the models were variant across groups, indicating group differences. Given that differences were found for the indirect effect of maternal distress to externalizing behaviors through emotion regulation difficulties, the direct paths that compose that indirect effect were tested next. The path from maternal distress to emotion regulation difficulties was constrained. Results indicated that the model was variant, again indicating group differences. Next the path from emotion regulation difficulties to externalizing behaviors was constrained with results indicating that groups were invariant.

Remaining paths were tested to ensure there were no additional variant paths. Specifically, the paths from (1) magnify to externalizing behaviors and (2) maternal distress to magnify were constrained independently in separate models. Results indicated that neither of these paths were variant.

In summary, the serial mediation (i.e., the indirect effect of maternal distress on externalizing problems through magnifying of emotions then emotion regulation difficulties) was variant among groups. Furthermore, the indirect effect of maternal distress on externalizing problems through emotion regulation difficulties was variant. Within this model, the specific paths from emotion socialization to emotion regulation difficulties and from maternal distress to emotion regulation difficulties were invariant. Specifically, it appeared that the path from magnify to emotion regulation was attenuated by the presence of a male caregiver, reducing from  $\beta = .378$ ,  $p < .001$ , in the single-parent

group to,  $\beta = .033$ ,  $p = .617$  in the two-parent group (see all path coefficients in Table 9).

In addition, although not significantly different between groups (i.e., the chi-square difference test was non-significant for the paths), there was a large decrease in effect size in the relation between maternal distress and magnification practices as well as adolescent emotion regulation difficulties in two-parent homes (see Table 9).

Table 9

*Path Coefficients Comparisons for Magnify Mediation Models in Three Samples*

Regression paths	Combined Sample <i>N</i> = 206	Single-Parent Sample <i>N</i> = 73	Two-Parent Sample <i>N</i> = 133
<u>Externalizing Problems with</u>			
1. Emotion Regulation Difficulties	.492***	.447***	.508***
2. Magnify	.130**	.213*	.139 <sup>†</sup>
3. Maternal Distress	.133*	.170	.107
4. Adolescent Age	.080	.100	.054
5. Maternal Age	-.022	-.070	-.010
<u>Emotion Regulation Difficulties with</u>			
6. Magnify	.168**	.378***	.033
7. Maternal Distress	.503***	.338***	.619***
8. Adolescent Age	-.105 <sup>†</sup>	-.136	-.070
9. Maternal Age	-.140*	-.154	-.096
<u>Magnify with</u>			
10. Maternal Distress	.341***	.197*	.417***
11. Adolescent Age	-.033	.116	.054
12. Maternal Age	-.094	.225 <sup>†</sup>	-.040
13. <u>Total Effect</u>	.453***	.396**	.486***
<u>Indirect Effects</u>			
14. MD → Mag. → Externalizing	.045 [.012, .095]	.042 [-.003, .091]	.058 [.004, .153]
15. MD → ER → Externalizing	.247 [.170, .366]	.151 [.042, .231]	.314 [.220, .519]
16. MD → Mag. → ER → Externalizing	.028 [.008, .065]	.033 [.000, .073]	.007 [-.020, .051]

Note. Mag. = Magnify, ER = Emotion Regulation Difficulties, MD = Maternal Distress, Statistics in brackets represent bootstrap confidence intervals. All other statistics represent standardized path coefficients.

†  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

All other initial tests for group differences followed the same procedure as the initial test for the magnify model above. Again, the model was first specified so that it could freely associate between the two samples. Next, the model was specified to have all regression coefficient paths constrained to equal in both samples. Following this, a chi-square difference test was conducted to analyze if the data fit better when allowed to freely associate (i.e., indicating no group differences) or fully constrained (i.e., indicating group differences).

For the neglect model, maternal and adolescent ages, as well as adolescent race, were included as covariates given their association with the endogenous variables (Table 3). The resulting chi-square difference test indicated that there was not a significant difference between the two models; thus, there likely were not group differences between single- and two-parent homes,  $\Delta\chi^2 (15, N = 206) = 15.289, p = .431$ .

For the punish model, maternal and adolescent ages, as well as adolescent race, were included as covariates given their association with the endogenous variables (Table 3). The resulting chi-square difference test indicated that there was not a significant difference between the two models; thus, there likely were not group differences between single- and two-parent homes,  $\Delta\chi^2 (15, N = 206) = 13.111, p = .594$ .

*Community stress.* With community stress as the predictor and following the same initial procedure to determine a group difference between single- and two-parent homes, the resulting chi-square difference test for the magnify model indicated that there was not a significant difference between the single and two-parent homes; thus, there likely were

not group differences,  $\Delta\chi^2 (12, N = 206) = 13.138, p = .356$  (with maternal and adolescent ages included as covariates). For neglect, the resulting chi-square difference test indicated that there was not a significant difference between the two models; thus, there likely were not group differences between single- and two-parent homes,  $\Delta\chi^2 (15, N = 206) = 18.416, p = .241$  (with maternal age, adolescent age, and adolescent race included as covariates). Finally, for punish, the chi-square difference test indicated that there was not a significant difference between the two models; thus, there likely were not group differences between single- and two-parent homes,  $\Delta\chi^2 (15, N = 206) = 13.350, p = .575$  (with maternal age, adolescent age, and adolescent race included as covariates). Thus, overall, the only group difference based on family structure was found for maternal distress when examining magnifying emotion socialization practices as a first stage mediator.

#### *Multigroup Model Comparisons for Paternal Emotion Socialization*

To better understand the impact of the paternal caregiver's emotion socialization practices, paternal emotion socialization practices were examined as a moderator (dichotomized by a mean score, see below for further explanation) in the serial mediation model for participants from two-parent homes (i.e., approximately two-thirds of the sample;  $N = 133$ ). The specific paternal emotion socialization practice used as a moderator corresponded to the associated maternal emotion socialization practice examined as the first mediator in the model. Although paternal maladaptive emotion socialization was examined, the hypothesis was that lower levels of these practices among fathers would attenuate the relation between maternal maladaptive emotion socialization and adolescent emotion regulation difficulties.

Multigroup comparisons were conducted with the same procedure described above for multigroup comparisons in family structure to examine how paternal emotion socialization might act as a moderator in the model. All analyses used the scaled emotion regulation variable. To be able to conduct a multigroup comparison, paternal emotion socialization was dichotomized. First, the median score for each construct (i.e., magnify, neglect, and punish) was obtained. Then, the variable was dichotomized into high and low socialization practices (i.e., scores lower than the median were placed in the “low” group and scores equal to or higher than the median were placed in the “high” group).

Again, initial tests for group differences followed the same procedure as the initial tests described for group differences in family structure. The model was first specified so that it could freely associate between the two samples. Next, the model was specified to have all regression coefficient paths constrained to be equal in both samples. Following this, a chi-square difference test was conducted to analyze whether the data fit better when allowed to freely associate (i.e., indicating no group differences) or when fully constrained (i.e., indicating group differences).

*Maternal distress.* With maternal distress as the predictor and following the procedure above to determine a group difference based on paternal magnify (high versus low paternal magnify,  $N = 68$  and  $65$ , respectively), the resulting chi-square difference test indicated that there was not a significant difference between the two models; thus there likely were not group differences based on level of paternal magnifying of emotions,  $\Delta\chi^2(12, N = 133) = 17.698, p = .125$  (with maternal age and adolescent age included as covariates). For neglect (high versus low paternal neglect,  $N = 66$  and  $67$ , respectively), the resulting chi-square difference test indicated that there was not a

significant difference between the two models; thus, there likely were not group differences,  $\Delta\chi^2(15, N = 133) = 7.503, p = .942$  (with maternal age, adolescent age, and adolescent race included as covariates). For punish (i.e., high versus low paternal punish,  $N = 75$  and  $58$ , respectively), the resulting chi-square difference test indicated that there was not a significant difference between the two models; thus, there likely were not group differences,  $\Delta\chi^2(15, N = 133) = 14.219, p = .509$  (with maternal age, adolescent age, and adolescent race included as covariates).

*Community stress.* With community stress as the predictor and following the same procedure to determine a group difference based on paternal magnify (high versus low paternal magnify,  $N = 68$  and  $65$ , respectively), the resulting chi-square difference test indicated that there was not a significant difference between the two models; thus, there likely were likely not group differences based on level of paternal magnifying of emotions,  $\Delta\chi^2(12, N = 133) = 11.781, p = .463$  (with maternal age and adolescent age included as covariates). For neglect (high versus low paternal neglect,  $N = 66$  and  $67$ , respectively), the chi-square difference test indicated that there was not a significant difference between the two models; thus, there likely were not group differences,  $\Delta\chi^2(15, N = 133) = 9.540, p = .848$  (with maternal age, adolescent age, and adolescent race included as covariates).

For punish (high versus low paternal punish,  $N = 75$  and  $58$ , respectively), the resulting chi-square difference test indicated that there was a marginally significant difference between the two models; thus there were possible group differences,  $\Delta\chi^2(15, N = 133) = 23.496, p = .074$  (with maternal age, adolescent age, and adolescent race included as covariates). To detect the specific areas in which the model was variant

between samples, paths were independently constrained and then tested against the baseline model by utilizing a chi-square difference test (see Table 10 for all tests conducted and described below). First, the direct effect was constrained to be equal between samples, with results indicating that the direct effect was variant between groups. Next, the serial mediation was examined and results indicated that the indirect was invariant between groups.

Table 10

*Multi-group Comparisons Model Fit Statistics for Punish*

	$\chi^2$	DF	$\Delta\chi^2$ p-value	CFI	RMSEA	RMSEA CI	RMSEA p-value
Model 1 <sup>a</sup>	.000	0	---	1.000	.000	.000-.000	1.000
Model 2 <sup>b</sup>	23.496	15	.074	.904	.092	.000-.161	.165
Model 3 <sup>c</sup>	4.841	1	.028	.957	.240	.064-.472	.041
Model 4 <sup>d</sup>	3.630	3	.304	.993	.056	.000-.220	.376
Model 5 <sup>e</sup>	1.255	2	.534	1.000	.000	.000-.212	.587
Model 6 <sup>f</sup>	3.532	2	.171	.983	.107	.000-.288	.221
Model 7 <sup>g</sup>	2.261	1	.133	.986	.138	.000-.386	.165
Model 8 <sup>h</sup>	3.398	1	.065	.973	.190	.000-.428	.088
Model 9 <sup>i</sup>	.134	1	.714	1.000	.000	.000-.234	.736
Model 10 <sup>j</sup>	.020	1	.889	1.000	.000	.000-.155	.898
Model 11 <sup>k</sup>	1.235	1	.266	.997	.059	.000-.338	.305

Note. Each model, following Model 1, is compared to Model one (i.e., a saturated model) with  $\chi^2$  of 0.000 and 0 degrees of freedom.

Thus, for each model, the  $\chi^2$  difference would be the  $\chi^2$  of the current model, given that it is compared to a saturated model with a  $\chi^2$  of 0.00 (e.g., the  $\chi^2$  difference between Model 1 and Model 2 is 23.496, with a difference of 15 in degrees of freedom with a resulting  $p$ -value of .074). CI = confidence interval.  $\Delta\chi^2$  = chi-square difference. Overall  $N = 133$ ; high punishing practices  $n = 75$ , low punishing practices  $n = 58$ .

<sup>a</sup> Model 1; baseline comparison model. All regression coefficients are unconstrained.

<sup>b</sup> Model 2; all regression coefficients are constrained.

<sup>c</sup> Model 3; the direct effect of community stress on externalizing behaviors is constrained.

<sup>d</sup> Model 4; the serial mediation indirect effect (i.e., community stress → punish → emotion regulation → externalizing behaviors) is constrained.

<sup>e</sup> Model 5; the mediation indirect effect of community stress → punish → externalizing behaviors is constrained.



<sup>f</sup>Model 6; the mediation indirect effect of community stress→emotion regulation→externalizing behaviors is constrained.

<sup>g</sup>Model 7; the direct effect of punish on emotion regulation is constrained.

<sup>h</sup>Model 8; the direct effect of community stress on emotion regulation is constrained.

<sup>i</sup>Model 9; the direct effect of emotion regulation on externalizing behaviors is constrained.

<sup>j</sup>Model 10; the direct effect of punish on externalizing behaviors is constrained.

<sup>k</sup>Model 11; the direct effect of community stress on punish is constrained.

To identify finer levels of variance between groups, stages of the indirect effect were examined (i.e., community stress→punish→externalizing behaviors; community stress→emotion regulation difficulties→externalizing behaviors, respectively). When examining the indirect effect of community stress to externalizing behaviors through punish, the results indicated invariance. Again, when examining the indirect effect of community stress to externalizing behaviors through emotion regulation difficulties, the model was invariant between groups. Analyses also were conducted to understand the specific direct paths that differed among groups. The path from community stress to emotion regulation difficulties was variant between groups. All remaining paths were tested, none of which yielded variance between groups.

In summary, the direct paths from both community stress to both emotion regulation and externalizing behaviors were variant across groups, in the context of punish. The path from community stress to externalizing was attenuated by the lower punishing paternal emotion socialization (and even changed directionality), changing from  $\beta = .132, p = .209$  in the high punish group to  $\beta = -.172, p = .053$  in the low punish group (see all path coefficients in Table 11). The path from community stress to emotion regulation was strengthened by the high punishing paternal emotion socialization (and even changed directionality), changing from  $\beta = -.028, p = .868$  in the high punish group to  $\beta = .265, p = .007$  in the low punish group (see all path coefficients in Table 11). No

other group differences were revealed based on level of paternal emotion socialization (i.e., magnify or neglect in the context of community stress; magnify, neglect, or punish in the context of maternal distress).

Table 11

*Path Coefficients for Mediation Models with Community Stress as the Predictor*

Regression paths	Combined Sample <i>N</i> = 206	Low Sample <i>N</i> = 58	High Sample <i>N</i> = 75
<u>Externalizing Problems with</u>			
1. Emotion Regulation Difficulties	.567***	.648***	.511***
2. Punish	.205**	.126 <sup>†</sup>	.245 <sup>†</sup>
3. Community Stress	.005	-.172 <sup>†</sup>	.132
4. Adolescent Age	.107*	.170 <sup>†</sup>	.060
5. Maternal Age	-.034	-.046	.001
6. Adolescent Race	-.030	-.154	.061
<u>Emotion Regulation Difficulties with</u>			
7. Punish	.225*	.299*	.172 <sup>†</sup>
8. Community Stress	.087	-.028	.265**
9. Adolescent Age	-.060	-.047	-.023
10. Maternal Age	-.222**	-.162	-.212
11. Adolescent Race	.006	.109	-.064
<u>Punish with</u>			
12. Community Stress	.088	.231	-.035
13. Adolescent Age	-.066	.196	-.236*
14. Maternal Age	-.033	-.200	-.129
15. Adolescent Race	.172*	.047	.101
16. <u>Total Effect</u>	.083	-.116	.256*
<u>Indirect Effects</u>			
17. CS → Pun. → Externalizing	.018 [-.023, .083]	.029 [-.003, .119]	-.009 [-.152, .117]
18. CS → ER → Externalizing	.049 [-.045, .179]	-.018 [-.333, .229]	.136 [-.064, .394]
19. CS → Pun. → ER → Externalizing	.011 [-.012, .048]	.045 [-.007, .198]	-.003 [-.042, .048]

Note. Pun. = Punish, ER = Emotion Regulation Difficulties, CS = Community Stress, Statistics in brackets represent bootstrap confidence intervals. All other statistics represent standardized path coefficients.

<sup>†</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

## CHAPTER IV - DISCUSSION

The current study provided further support that maternal distress (i.e., maternal depressive symptoms and parenting stress) is predictive of adolescent externalizing problems, in addition to poorer emotion socialization practices by the maternal caregiver and poorer emotional regulation in adolescents. Consistent with the literature, the current study further supported the hypothesis that emotion socialization practices are predictive of adolescent emotion regulation difficulties as well as adolescent externalizing problems. Moreover, emotion regulation difficulties were predictive of more externalizing problems for adolescents.

The study also revealed interesting findings about the mediating roles of emotion socialization and emotion regulation difficulties. Specifically, the data supported the hypothesis that maternal distress was related to increased externalizing behaviors in adolescents, first through emotion socialization (specifically, magnification of emotional experiences as well as punishing of emotional experiences) and then emotion regulation difficulties, sequentially. However, this indirect effect was not found for the emotion socialization practice of neglecting emotional experiences. Additionally, results indicated that maternal caregivers' emotion socialization practices are related to their experience of distress. This impact on maternal caregivers' magnification of emotional experiences of adolescents appear to be particularly hindering of an adolescents' ability to then regulate emotions and ultimately display more externalizing problems. However, the directionality of these relations is reversible. Thus, it is possible that adolescent emotional and behavioral problems contribute to parents engaging in more maladaptive socialization practices as well as ultimately experiencing more distress.

These results highlight the importance of maternal emotion socialization practices, specifically when considering the practices of magnification and punishment of emotional experiences. That is, when maternal caregivers experience increased stressors/depressive symptoms and they engage in increased magnification (e.g., crying with the child) or punishing (e.g., making comments that shame the adolescent's emotional expression), the adolescent's ability to then regulate his/her own emotions and refrain from externalized behaviors is impaired. However, this serial mediational effect was not found for neglect. Results revealed that the relation between emotion regulation difficulties and magnify as well as punish was significant, whereas the relation between emotion regulation difficulties and neglect was not. However, all three socialization practices were related to externalizing problems. This distinction highlights that, whereas adolescent emotion regulation difficulties are an important factor in the relation between maternal distress and adolescent externalizing behaviors in the context of magnification and punitive emotion socialization, adolescent emotion regulation difficulties are not important in that link in the context of neglectful emotion socialization. Rather, there is likely some other important factor, such as inhibition or maternal-monitoring of adolescents' daily lives, that must be considered to further understand the relation between neglecting emotion socialization practices and externalizing behaviors.

Ultimately, the results of the current study indicate that maternal distress is a better predictor of maladaptive emotion processes in a family as well as adolescent externalizing problems than community stress experienced by a family. Overall, community stress was not predictive of externalizing problems, emotion regulation difficulties, or emotion socialization practices, except in the context of punishing

practices where there was some evidence that paternal emotion socialization may attenuate these relations (see below). This finding is inconsistent with much of the literature. For example, studies have found increased externalizing problems (Cooley-Quille, Turner, & Beidel, 1995; Linares et al., 2001; Youngstrom, Weist, & Albus, 2003) as well as impaired youth emotion regulation (e.g., Kliewer et al., 2004) and parent socialization practices (although not specifically emotion socialization; e.g., Kliewer et al., 2004; Westbrook & Harden, 2010) in youth exposed to high levels of community violence. The current inconsistent finding may indicate that there is an unaccounted for variable. For example, Linares et al. (2001) found that maternal distress mediated the relation between community violence and behavioral problems in youth. Specifically, the direct path from community violence to youth behavioral problems diminishes when accounting for maternal distress. This finding highlights that considering alternative variables and hypothesized pathways are important and may have contributed to the lack of findings in the current analyses.

To understand the process of emotion socialization better, multigroup analyses were conducted to test two separate hypothesized moderators (i.e., family structure, paternal emotion socialization). Specifically, it was hypothesized that the presence of a paternal caregiver (as well as the presence of positive emotion socialization in two-parent homes) would attenuate the relation between maladaptive maternal emotion socialization practices and emotion regulation difficulties in adolescents. The multigroup analysis indicated that paternal emotion socialization was not a moderator of the serial mediation effects in any of the models (e.g., maternal distress as a predictor, magnify), inconsistent with previous findings. Although there were not group differences in mediating effects,

the relation between community stress and both emotion regulation and externalizing behaviors was moderated by paternal punishing practices (although marginally significant). It appears that paternal emotion socialization practices can be an important factor for an adolescent living in high stress communities. Interestingly, higher paternal punishing acted as a risk factor for emotion regulation difficulties and lower paternal punishing emotion socializing acted as a protective factor for externalizing problems.

Research has frequently shown that a paternal caregiver's emotion socialization practices act as a protective (e.g., Mezulis et al., 2004), and sometimes a risk factor (Shorte et al., 2016), for youth. Thus, we would have expected several group differences to emerge, rather than just one marginal difference. Moreover, paternal presence has been found to be a buffer against negative outcomes for youth specifically in the context of maternal depression (Breux et al., 2016; Nelson et al., 2009). It may be that the sample was too small to detect group differences; thus, leading to results that were not largely supportive of previous research. In addition, paternal mental health was not assessed in the current study, so it is possible that there were other important factors contributing to the family emotional processes that were not accounted for.

However, family structure was likely a moderator (i.e., trend toward significance in multigroup analyses) but only in the condition of maternal distress as the predictor and magnify (and not punish or neglect) as the initial mediator (i.e., maternal distress → magnify → emotion regulation difficulties → externalizing behaviors). Specifically, it was found that the overall serial indirect effect, the indirect effect from maternal distress to externalizing problems through emotion regulation difficulties, and the paths from magnify and emotion regulation difficulties and from maternal distress to emotion

regulation difficulties were all moderated by the presence of a paternal caregiver as evidenced by the chi-square difference tests. When a second caregiver was present, the magnitude of the relation between magnify and emotion regulation difficulties decreased and was not significant. However, in single-parent homes, despite a lower number of participants (thus decreased power), the relation between magnify and emotion regulation difficulties was significant. This finding indicates that a second caregiver appears to act as a protective factor in the context of a distressed maternal caregiver who engages in increased emotion socialization practices of magnification.

In single-parent homes, when maternal caregivers engage in magnification (conceptually, a form of their own emotion dysregulation), the adolescent is provided with a poor model of regulating emotions. However, in a two-parent home, the adolescent has an opportunity to possibly receive an alternative model of how to regulate emotions. Moreover, the moderating effect of family structure may have only been significant in the context of magnification because, unlike neglect and punish which are simply the absence of helping to regulate emotions, magnify, by its nature is a form of modeling poor emotion regulation. Thus, modeling of regulatory practices might be key in understanding impairments in adolescent emotion regulation and later outcomes (e.g., externalizing behaviors).

Thus, magnification socialization practices appear to be a key factor in understanding the emotional processes within a family. Specifically, if magnification is in fact, in more simplistic terms, caregivers modeling poor emotion regulation, there are clear clinical implications. Targeting parenting socialization strategies by intervening in a family therapy modality and targeting emotion regulation within the family may increase



adolescents' emotion regulation abilities and ultimately their externalizing abilities. Thus, recognizing and targeting emotional regulation in a family context in youth presenting with externalizing problems may be particularly important when the maternal caregiver appears to engage in magnification of adolescent emotions and/or the adolescent struggles to regulate emotions.

In addition, although not significantly different between groups, there was a large decrease in effect size in the relation between maternal distress and magnification practices, as well as adolescent emotion regulation difficulties, in two-parent homes. Specifically, in two-parent homes in which maternal caregivers experienced high levels of maternal distress, maternal caregivers engaged in poorer emotion socialization practices and adolescents had poorer emotion regulation skills. Thus, the presence of a paternal caregiver may be a risk factor, rather than a protective factor. At first glance, it appears that these findings contradict theory and previous hypotheses. However, it is possible that the presence of a paternal caregiver in fact increases the distress a maternal caregiver experiences (e.g., marital conflict). This finding highlights the complicated nature of family systems and the importance of considering other factors such as marital conflict in future studies.

Finally, *post hoc* analyses indicated that, frequently, the hypothesized directionality of the models, though significant, was also reversible. For instance, the mediators (i.e., magnify and emotion regulation difficulties) were interchangeable in the serial mediation of maternal distress to externalizing problems. Ultimately, the conclusions that can be drawn are that, although significant indirect and direct effects were found, the hypothesized directionality must be interpreted with caution. Only a

longitudinal study will further clarify the directionality of many of these relations, especially in the context of maternal distress and maternal magnification of emotions.

### Strengths of Current Study

The use of multiple informants, rather than simply relying on maternal caregiver report, increased the strength of this study by reducing common method variance. Specifically, given that there were significant findings for models where an exogenous variable (i.e., maternal distress, community stress) was reported on by one reporter (i.e., maternal caregiver) and some of the endogenous variables (i.e., emotion socialization, emotion regulation) were reported by another reporter (i.e., adolescent), it is likely that common method variance was reduced in this study. However, there is some common variance introduced by the fact that maternal caregivers reported on the predictor variable and the final criterion variable (i.e., externalizing problems). The current study's sample had an even distribution of adolescent boys and girls. Additionally, the sample was not geographically bound and had substantial variability in socioeconomic status, which was specifically important for theoretical underpinnings of this study (i.e., community stress).

Additionally, the inclusion of adolescents' perceptions of their fathers' emotion socialization practices is a unique contribution. The role of paternal emotion socialization within a family is an area that has been neglected in the current literature. Despite the lack of attention in the literature, the small amount of research including paternal emotion socialization indicates a need to better understand the role of paternal caregivers in family emotional transactions (Breux et al., 2016, Mezulis et al., 2004, Nelson et al., 2009, Shortt et al., 2016, Stocker et al., 2007).

Moreover, the study attempted to further understand the emotion processes within various family contexts (i.e., two-parent versus single, paternal emotion socialization). This approach led to increased information about the role that paternal emotion socialization practices play in a family. Research should continue to better understand family factors and how they contribute to the emotional processes within a family.

#### Limitations and Future Directions

Given that this study was cross-sectional, it is possible that the directionality of effects occurs in an alternative sequence. In fact, *post hoc* analyses indicated that this is highly likely in the condition of magnification emotion socialization and maternal distress. However, in the context of punishing and maternal distress, *post hoc* analyses bolstered the confidence we can place in the hypothesized directionality. To better understand the temporal sequencing of these possible mediational effects, a longitudinal study needs to be conducted. Future research should continue to consider the constructs in this study in a longitudinal design. Ideally, a serial mediation model would be tested across four time points (predictor at time 1, mediator one at time 2, mediator two at time 3, and criterion at time 4), accounting for the variance attributable at earlier time points of the mediators to criterion variables.

Although the overall sample size is considered large enough for the cross-sectional serial mediation analyses conducted for the current study (allowing for a participant-variable ratio well above the minimum 10:1 ratio), the sample size may have been insufficient when running the multigroup analyses. Specifically, when analyzing the multigroup comparisons of single- versus two-parent homes, the overall sample of 206 had to be split into smaller samples of 73 and 133 (leaving a participant-variable ratio of

approximately 10:1 for the smallest group and model with largest number of constructs). Although the ratio was acceptable, it was much lower than the full-sample ratio (29:1 for the most robust model). The sample sizes when analyzing paternal emotion socialization practices were reduced even further (i.e., overall sample of 133 that was then dichotomized into two groups). These samples led to a ratio of approximately 8:1 to 11:1, indicating that the power within each group was likely insufficient. Thus, the lack of findings may be attributed to a lack of power. Further support that these models should be examined with a larger sample (i.e., thus more power) comes from the finding that one of the models demonstrated a marginally significant difference between high and low paternal emotion socialization (i.e., *trending* toward significance).

Moreover, to test the moderating effects of paternal emotion socialization, a continuous variable had to be dichotomized. Creating a three-level moderator was not possible due to the substantial sample size for each group it would have required. Future studies should attempt to collect larger samples of paternal caregiver information that provide adequate power to allow for a quartile- or quintile-split moderator.

This study accounted for many possible constructs of importance; however, it is likely that this study did not capture all possible contributing constructs and complex occurrences that would lead to increased adolescent externalizing behaviors. For example, the diagnostic histories of the caregivers were not considered, and there were no data obtained on paternal depression. The literature indicates that paternal depression, specifically in the presence of maternal depression, is predictive of increased externalizing problems (Brennan, Hammen, Katz, & Le Brocque, 2002). Given this, future studies might benefit from including paternal depression as a construct. For

example, it would be interesting to compare how maternal distress and paternal distress act as a predictor in the overall serial mediated models proposed in this study.

Although the sample had adequate variation in SES, the sample was largely Caucasian (76%), indicating that the sample was relatively homogeneous in regard to race. Therefore, the generalizability of these results is somewhat limited to Caucasian families. Future studies should aim to increase the variability of race within their sample. Additionally, given the extensive efforts to ensure an adequate representation of lower SES families, the sample screened out several higher SES families. Given the substantial proportion of the sample having lower income, increasing variability in SES by including a larger portion of higher SES families would have increased the generalizability of the findings. Moreover, the families included in the study were strictly heterogeneous families (i.e., male and female caregivers). Homes with two female caregivers or two male caregivers were not considered. Additionally, more complex family structures (e.g., mother and aunt) were not considered. Thus, the generalizability of these results is limited to heterogeneous (likely heterosexual) families.

The operationalization of community violence might have been weak in this study. The composite was comprised of various aspects of one's community environment. It may be that the analyzing the components separately would yield more informative results. For example, it may be that having a sense of community or belongingness is more important than the overall community problems to which a family is exposed. However, because these were combined in a composite, the effects might have been washed out. Future studies should examine community stress with a more specific operationalization of the construct. Additionally, it might be that peers' emotion

socialization plays an important role in the context of community stress. Because community stress is a construct outside of the family (compared to maternal distress which could be considered within the family), it may be that peer socialization is more important than caregivers' emotion socialization when considering the effect of community stress on adolescent outcomes. Given this possibility, future studies should also consider the emotion socialization practices of peers when community stress is of interest.

Lastly, although having adolescents report on maternal and paternal emotion socialization practices allows one to capture the perspective of the adolescents' emotional experiences, it would likely be of value to have the caregivers report on their own emotional practices as well. Doing so would allow for further examination of cross-reporter discrepancy to obtain a more in-depth understanding of the perceptions of emotional processes within a family.

### Conclusions

Overall, emotional processes within a family appear to be particularly important in regard to adolescent outcomes. Moreover, those emotion socialization practices are affected by caregivers' mental health (i.e., depressive symptoms, parenting stress). Specific emotion socialization practices—magnification and punishment—appear to have more impact on adolescent functioning (i.e., emotion regulation difficulties and externalizing problems); thus, emotion socialization practices vary in their relation with adolescent outcomes. Additionally emotional processes in the family are not necessarily affected by increased community stress. However, it may be that community stress was too broadly defined, or that peer emotion socialization in the context of community stress

is more impactful. Future studies should continue to examine emotion socialization and regulation in the context of maternal distress and community stress. Examining these processes in a longitudinal manner as well as accounting for additional contributing factors (e.g., paternal depression, peer emotion socialization) should be important for increasing our understanding of emotional processes and adolescent functioning. The results of this study provide increased understanding of the emotional processes within a family as well as some of the specific emotional processes that may differ between single- and two-parent homes. More specifically, based on the findings of this study, clinicians may consider focusing on caregiver emotion regulation skills and modeling of proper emotion regulation, possibly within a family therapy modality, when presented with youth displaying externalizing behaviors in families with strained emotional transactions. These results also highlight a need to further understand the complexities of the emotional processes within a family—specifically the ways in which various emotion socialization practices relate to various outcomes and interactions within a family.

## APPENDIX A – Demographic Questionnaire

The following questions refer to you and your family:

Do you have children?

- ☐ Yes
- ☐ No

In which of the following age groups do you have a child?

- ☐ 0-5
- ☐ 6-10
- ☐ 11-17
- ☐ 18+

For this study, we will need to you to complete the first study, and then we will need your child age 11-17 to take the second study (you will be told in red font when this time comes). If you have multiple children in the 11-17 age group, please pick the one who is available and focus on that child for the remainder of the study.

Your Adolescent's First Name:

Your Adolescent's Age:

Your Age:

Your Gender:

- ☐ Male
- ☐ Female

Relation to Adolescent (for example: mother, father, stepmother, aunt):

- ☐ Biological mother
- ☐ Biological father
- ☐ Adoptive mother
- ☐ Adoptive father
- ☐ Stepmother
- ☐ Stepfather
- ☐ Grandmother
- ☐ Grandfather
- ☐ Aunt
- ☐ Uncle
- ☐ Other (please specify below) \_\_\_\_\_



Your Race:

- ☐ White
- ☐ Black
- ☐ Hispanic
- ☐ Asian
- ☐ Mixed
- ☐ Other

Marital Status:

- ☐ Married
- ☐ Separated
- ☐ Divorced
- ☐ Widowed
- ☐ Not Married and not living with a significant other
- ☐ Not Married but living with a significant other

How long has this been your marital status (in years)?

What is the highest level of education you have completed?

- ☐ 6th grade or less
- ☐ Junior high school (7th, 8th, 9th grade)
- ☐ some high school (10th, 11th grade)
- ☐ High School Graduate
- ☐ Some College (at least 1 year) or specialized training
- ☐ College/university graduate (4-year degree)
- ☐ Graduate professional degree (Master's, Doctorate)

What is the highest level of education of your spouse/significant other in the home?

- ☐ 6th grade or less
- ☐ Junior high school (7th, 8th, 9th grade)
- ☐ Some high school (10th, 11th grade)
- ☐ High School Graduate
- ☐ Some College (at least 1 year) or specialized training
- ☐ College/university graduate (4-year degree)
- ☐ Graduate professional degree (Master's, Doctorate)

What is your employment status?

- ☐ Employed Full Time
- ☐ Employed Part Time
- ☐ Retired
- ☐ Unemployed

What is your spouse/significant other living in the home employment status?

- ☐ Employed Full Time
- ☐ Employed Part Time
- ☐ Retired
- ☐ Unemployed

Please list who lives in your household: Please be specific in describing the relation to the adolescent in the study: self, brother, sister, mother, father, step-father, step-mother, stepbrother, half-brother, adopted sister, grandmother, aunt, cousin, etc.

	First Name	Age	Gender		Relation to Adolescent in the Study	How many years have they lived with the adolescent
			Male	Female		
1	-	-	<input type="radio"/>	<input type="radio"/>	-	-
2			<input type="radio"/>	<input type="radio"/>		
3			<input type="radio"/>	<input type="radio"/>		
4			<input type="radio"/>	<input type="radio"/>		
5			<input type="radio"/>	<input type="radio"/>		
6			<input type="radio"/>	<input type="radio"/>		
7			<input type="radio"/>	<input type="radio"/>		
8			<input type="radio"/>	<input type="radio"/>		
9			<input type="radio"/>	<input type="radio"/>		
10			<input type="radio"/>	<input type="radio"/>		

What is the total annual income of your household? (combine the income of all people living in your house.)

- ☐ \$0 - \$4,999
- ☐ \$5,000 - \$9,999
- ☐ \$10,000 - \$14,999
- ☐ \$15,000 - \$24,999
- ☐ \$25,000 - \$34,999
- ☐ \$35,000 - \$49,999
- ☐ \$50,000 - \$74,999
- ☐ \$75,000 - \$99,999
- ☐ 100,000 and above

Select the color purple:

- ☐ green
- ☐ yellow
- ☐ purple
- ☐ red

Have you ever been diagnosed with a mood disorder such as depression?

- ☐ Yes
- ☐ No

If yes, what was your diagnosis?

- ☐ Major Depressive Disorder
- ☐ Persistent Depressive Disorder
- ☐ Bipolar I
- ☐ Bipolar II
- ☐ Other

Year diagnosed with Major Depressive Disorder:

Year diagnosed with Persistent Depressive Disorder:

Year diagnosed with Bipolar I:

Year diagnosed with Bipolar II:

Please list your diagnosis (for "Other") and year diagnosed:

Diagnosis

Year Diagnosed

Have you ever been diagnosed with an anxiety disorder?

- ☐ Yes
- ☐ No

If yes, what was your diagnosis?

- ☐ Generalized Anxiety Disorder
- ☐ Social Phobia
- ☐ Specific Phobia
- ☐ Panic Disorder
- ☐ Post Traumatic Stress Disorder (PTSD)
- ☐ Obsessive-Compulsive Disorder (OCD)
- ☐ Other

Year diagnosed with Generalized Anxiety Disorder:

Year diagnosed with Social Phobia:

Year diagnosed with Specific Phobia:

Year diagnosed with Panic Disorder:

Year diagnosed with Post Traumatic Stress Disorder (PTSD):

Year diagnosed with Obsessive-Compulsive Disorder (OCD):

Please list your diagnosis (for "Other") and year diagnosed:

Diagnosis

Year diagnosed

Has your significant other ever been diagnosed with a mood disorder such as depression?

☐ Yes

☐ No

If yes, what was the diagnosis?

☐ Major Depressive Disorder

☐ Persistent Depressive Disorder

☐ Bipolar I

☐ Bipolar II

☐ Other

Year diagnosed with Major Depressive Disorder:

Year diagnosed with Persistent Depressive Disorder:

Year diagnosed with Bipolar I:

Year diagnosed with Bipolar II:

Please list their diagnosis (for "Other") and year diagnosed:

Diagnosis

Year diagnosed

Has your significant other ever been diagnosed with an anxiety disorder?

☐ Yes

☐ No

If yes, what was their diagnosis?

- ☐ Generalized Anxiety Disorder
- ☐ Social Phobia
- ☐ Specific Phobia
- ☐ Panic Disorder
- ☐ Post Traumatic Stress Disorder (PTSD)
- ☐ Obsessive-Compulsive Disorder (OCD)
- ☐ Other

Year diagnosed with Generalized Anxiety Disorder:

Year diagnosed with Social Phobia:

Year diagnosed with Specific Phobia:

Year diagnosed with Panic Disorder:

Year diagnosed with Post Traumatic Stress Disorder (PTSD):

Year diagnosed with Obsessive-Compulsive Disorder (OCD):

Please list their diagnosis (for "Other") and year diagnosed:

Diagnosis

Year diagnosed

The following questions refer to the adolescent participating in the study:

Your Adolescent's First Name:

Adolescent's Gender:

- ☐ Male
- ☐ Female

Adolescent's date of birth (MM/DD/YYYY)

Your Adolescent's Race:

- ☐ White
- ☐ Black
- ☐ Hispanic
- ☐ Asian
- ☐ Mixed
- ☐ Other

What type of school does your adolescent attend?

- ☐ Public - Traditional
- ☐ Private - Traditional
- ☐ Other - Traditional
- ☐ Home school
- ☐ Boarding
- ☐ Military
- ☐ College/University
- ☐ Other

What grade is your adolescent in?

- ☐ 5th
- ☐ 6th
- ☐ 7th
- ☐ 8th
- ☐ 9th
- ☐ 10th
- ☐ 11th
- ☐ 12th

Adolescent's overall performance in school

- ☐ A's
- ☐ A's and B's
- ☐ B's and C's
- ☐ C's and D's
- ☐ D's and F's

	1	2	3	4	5
How well do you get along with your adolescent?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	0	1	2	3	4	5
How well does your adolescent get along with siblings (if any)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Number of hours
<p>How many hours per day do you spend with your adolescent during the week (e.g., doing homework; playing games; talking about their day, plans, or other topics; watching television; going on trips)?</p> <p>How many hours per day does your significant other spend with your adolescent during the week (e.g., doing homework; playing games; talking about their day, plans, or other topics; watching television; going on trips)?</p> <p>How many hours per day do you spend with your adolescent during weekends (e.g., doing homework; playing games; talking about their day, plans, or other topics; watching television; going on trips)?</p> <p>How many hours per day does your significant other spend with your adolescent during weekends (e.g., doing homework; playing games; talking about their day, plans, or other topics; watching television; going on trips)?</p>	

## APPENDIX B – IRB Original Approval Letter



**INSTITUTIONAL REVIEW BOARD**  
118 College Drive #5147 | Hattiesburg, MS 39406-0001  
Phone: 601.266.5997 | Fax: 601.266.4377 | [www.usm.edu/research/institutional.review.board](http://www.usm.edu/research/institutional.review.board)

### NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.  
Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 15050603  
PROJECT TITLE: Emotion and Family Factors Related to Adolescent Behavior  
PROJECT TYPE: New Project  
RESEARCHER(S): Kristy M. DiSabatino  
COLLEGE/DIVISION: College of Education and Psychology  
DEPARTMENT: Psychology  
FUNDING AGENCY/SPONSOR: N/A  
IRB COMMITTEE ACTION: Expedited Review Approval  
PERIOD OF APPROVAL: 06/05/2015 to 06/04/2016  
**Lawrence A. Hosman, Ph.D.**  
**Institutional Review Board**



## APPENDIX C – IRB First Addendum Approval



### INSTITUTIONAL REVIEW BOARD

118 College Drive #5147 | Hattiesburg, MS 39406-0001

Phone: 601.266.5997 | Fax: 601.266.4377 | [www.usm.edu/research/institutional.review.board](http://www.usm.edu/research/institutional.review.board)

### NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.  
Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: CH15050603

PROJECT TITLE: Emotion and Family Factors Related to Adolescent Behavior

PROJECT TYPE: Change to a Previously Approved Project

RESEARCHER(S): Kristy M. DiSabatino

COLLEGE/DIVISION: College of Education and Psychology

DEPARTMENT: Psychology

FUNDING AGENCY/SPONSOR: N/A

IRB COMMITTEE ACTION: Expedited Review Approval

PERIOD OF APPROVAL: 10/15/2015 to 10/14/2016

**Lawrence A. Hosman, Ph.D.**

**Institutional Review Board**

## APPENDIX D – IRB Second Addendum Approval



**INSTITUTIONAL REVIEW BOARD**  
118 College Drive #5147 | Hattiesburg, MS 39406-0001  
Phone: 601.266.5997 | Fax: 601.266.4377 | [www.usm.edu/research/institutional.review.board](http://www.usm.edu/research/institutional.review.board)

### NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.  
Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: CH2-15050603  
PROJECT TITLE: Emotion and Family Factors Related to Adolescent Behavior  
PROJECT TYPE: Change to a Previously Approved Project  
RESEARCHER(S): Kristy M. DiSabatino  
COLLEGE/DIVISION: College of Education and Psychology  
DEPARTMENT: Psychology  
FUNDING AGENCY/SPONSOR: N/A  
IRB COMMITTEE ACTION: Expedited Review Approval  
PERIOD OF APPROVAL: 02/16/2016 to 02/15/2017  
**Lawrence A. Hosman, Ph.D.**  
**Institutional Review Board**

## APPENDIX E – Adult Consent: Authorization to Participate in Research Project

Consent is hereby given to participate in the study titled: Emotion and Family Factors Related to Adolescent Behavior

**Purpose:** The proposed project examines the association between family-related factors (e.g., neighborhood resources/support, parent stress, emotion socialization in the family, and behaviors in adolescents. The findings of my study will be helpful to both psychologists and parents in understanding the ways in which certain family factors and emotional practices relate to certain types of behaviors in adolescents. Findings may be also be used to help identify a specific risk factor for problem behaviors and a supportive factor to help protect against problem behaviors. I am contacting you due to your interest in the study.

**Description of Study:** Parents of children 11 to 17 years old and their adolescent will participate in the completion of questionnaires. Participants will complete an online survey that includes a form gathering family information and measures of emotion socialization practices, emotion regulation, community/neighborhood environment/conditions, parenting stress, anxiety, and depression. The questionnaires should take approximately 20 minutes for the parents to complete and no longer than 15 minutes for the adolescent to complete.

**Benefits:** There are no direct benefits to you or your child for participating in this study. There is no direct compensation for participation; however, you were contacted prior to completing this study by your paneling provider regarding your agreed upon incentive for completing this study.

**Risks:** There is little risk for participants completing the study, although some parents may find it mildly distressing to report some behavior problems of their children or may become aware of problems that had not previously been of concern. Furthermore, adolescents may also find it mildly distressing to report any behavioral concerns, social concerns, psychological concerns, or difficulties with support sources that they may be experiencing. If you have concerns about your child's mood or behavior and would like to seek mental health services, please contact a local mental healthcare provider in your area. A list of local healthcare providers in your area can be obtained through the Mental Health Association, Department of Education for Licensing of Mental Health Professional, or your Primary Care Physician.

**Confidentiality:** All efforts will be made to protect participants' privacy and to maintain the confidentiality of the information acquired through this project. Once the participants have completed the measures, any identifying information will be separated from responses in the database.

**Participant's Assurance:** Whereas no assurance can be made concerning results that may be obtained (since results from investigational studies cannot be predicted) the researcher

will take every precaution consistent with the best scientific practice. Participation in this project is completely voluntary, and subjects may withdraw from this study at any time without penalty, prejudice, or loss of benefits. Questions concerning the research should be directed to Kristy DiSabatino (901-497-2822) working under the supervision of Dr. Sara Jordan and Dr. Tammy Barry (601-266-4588). This project and consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research subject should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5147, Hattiesburg, MS 39406-0001, (601) 266-5997. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits. Any questions about the research should be directed to the Principal Investigator, Kristy DiSabatino, or Sara Jordan or Tammy Barry, using the contact information provided above. An unsigned copy of this form will be given to the participant if completing a paper copy. If completing this study online, you may now print a copy of this form from your web browser to reference later if needed.

By clicking Next, I consent to participate in this study. (NEXT BUTTON)

## APPENDIX F – Adolescent Assent: Agreement to Participate in Research Project

We are doing a study to learn about adolescent behaviors as well as family and emotion related factors. We are interested in how these things relate to certain types of behaviors. We are asking for your help because we want to learn about how your experiences and family interactions relates to how you feel and behave.

If you agree to be in our study, you will be asked to answer some questions about yourself using an online survey. The questions we will ask are only about what you think. There are no right or wrong answers because this is not a test. We simply want you to answer the questions about yourself as best you can. It should take no longer than a half an hour to answer the questions. You can ask your parents to contact us at any time if you have questions about this study. Your parents will also be asked to complete some surveys.

There are two important things to remember. First, you are a volunteer, which means you are helping us, but you do not have to unless you want to help. If you decide at any time not to finish, you can tell your parents and stop completing the survey. Second, the information that you give will be private. All of the information that we get will be used in research, but your name and other information that would let people know it is about you will not be used.

If you click the “Next” button below, it means you have read this agreement and you want to be in the study. If you don’t want to be in the study, don’t click “Next.” Being in the study is up to you, and no one will be upset if you don’t start the survey or if you change your mind later.

By clicking Next, I consent to participate in this study. (NEXT BUTTON)

I have read, understood, and printed a copy of, the above assent form and desire of my own free will to participate in this study.

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